United States Court of Appeals
for the
District of Columbia Circuit

TRANSCRIPT OF RECORD

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TRANSCRIPT OF RECORD

United States Court of Appeals for the District of Columbia

OCTOBER TERM 1938.

365

No. 7266

JULIUS F. HELLWEG, APPELLANT,

vs.

CHESAPEAKE & POTOMAC TELEPHONE COMPANY, A CORPORATION.

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE DISTRICT OF COLUMBIA.

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THE ASSOCIATION OF THE BAR
OF THE CITY OF NEW YORK

United States Court of Appeals for the District of Columbia

OCTOBER TERM 1938.

No. 7266

JULIUS F. HELLWEG, APPELLANT,

vs.

CHESAPEAKE & POTOMAC TELEPHONE COMPANY, A CORPORATION, APPELLEE.

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE DISTRICT OF COLUMBIA.

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United States Court of Appeals for the District of Columbia

A. In the District Court of the United States
For the District of Columbia

No. 87884 At Law

JULIUS F. HELLWEG, *Plaintiff*,

vs.

CHESAPEAKE & POTOMAC TELEPHONE COMPANY, a corporation,
Defendant.

UNITED STATES OF AMERICA,
District of Columbia, ss:

BE IT REMEMBERED, That in the District Court of the United States for the District of Columbia, at the City of Washington, in said District, at the times hereinafter mentioned, the following papers were filed and proceedings had, in the above-entitled cause, to wit:—

1 *Declaration.*

Filed August 10 1936

In the District Court of the United States
For the District of Columbia

Law No. 87884

JULIUS F. HELLWEG, 3901 Connecticut Avenue, N. W.,
Washington, D. C., *Plaintiff*,

vs.

CHESAPEAKE & POTOMAC TELEPHONE COMPANY, a corporation,
725-13th Street, N. W., Washington, D. C., *Defendant*.

First Count.

The plaintiff Julius F. Hellweg, sues the defendant, the Chesapeake and Potomac Telephone Company, a quasi public corporation, for that heretofore, on to wit, the 6th. day

of June, 1934, and for a long time prior thereto, the defendant owned, controlled and operated a telephone system for the benefit of itself and its patrons in the City of Washington, in the District of Columbia; that the said system of telephones was operated by the use of wires, receivers, transmitters and electricity; that the plaintiff, on to wit, the aforesaid date, was a Captain of the United States Navy engaged in service to the Government of the United States of America and attached to the United States Naval Observatory in the City of Washington, in the District of Columbia; that the defendant, prior to the aforesaid date, had installed a telephone system consisting of wires, receivers, transmitters and electricity in the United States Naval Observatory for the use of the Government of the United States of America and its employees, which telephone system was controlled, maintained and operated by the defendant; and that on the aforesaid date, to wit, the 6th.
2 of June, 1934, the aforesaid telephone system and apparati were in use at the United States Naval Observatory aforesaid; that it then and there became and was the duty of the defendant to exercise the highest degree of care to keep its telphones, wires and apparati in a safe condition so as not to injure patrons, and more particularly this plaintiff; yet, the defendant, notwithstanding its duty as aforesaid and negligently disregarding the same, and while the plaintiff was in the discharge of his duties as a naval officer in the United States Naval Observatory aforesaid, and while in the exercise of due care, attempted to use one of the telephones, installed by the defendant, and in so doing and while the receiver of the said telephone was about 3 or 4 inches distant from the right ear of the plaintiff, the said plaintiff was suddenly and violently struck by lightning and electricity which came through the receiver of the said telephone by reason of the negligence of the defendant, whereby the plaintiff was painfully and permanently injured about his head, and more particularly the plaintiff was painfully and permanently injured about his right ear, and as a result thereof, he was caused to lose his sense of hearing through his right ear and he was caused to lose, to wit, (90%) Ninety per cent of his eye sight, all of which has permanently injured the plaintiff; that as a result of

the aforesaid injuries caused by the negligence of the defendant as aforesaid, the plaintiff was caused to suffer constant and severe headaches and is now suffering therefrom, thereby causing great physical and mental pain and anguish, all of which has permanently injured the plaintiff, and has caused the plaintiff to be confined to bed for long periods of time, and will in the future cause the plaintiff to be confined to bed; that all of the aforesaid injuries sustained by the plaintiff have permanently disabled the plaintiff from engaging in his normal recreational activities, to wit, playing tennis, shooting, attending theaters
3 and moving pictures, and operating an automobile
at night, by reason of him being unable to see and hear, as aforesaid; that as a result of the aforesaid injuries, the plaintiff was caused to expend large sums of money for medical treatment and attention and travel in his endeavor to be cured of the aforesaid injuries.

That the defendant removed its appliances, equipment and apparati from the United States Naval Observatory on, to wit, the 7th. day of June, 1934, thereby preventing the plaintiff and others from inspecting said equipment, etc. to determine the cause of the lightning and electricity being carried through the said equipment which caused the aforesaid injuries, and that the cause of same is solely within the knowledge of the defendant and its agents, servants and employees.

Wherefore, by reason of the premises, the plaintiff claims damages of the defendant in the sum of One Hundred Thousand Dollars ($100,000.00) besides costs.

Second Count.

The plaintiff, Julius F. Hellweg, sues the defendant, the Chesapeake and Potomac Telephone Company, a quasi public corporation, for that, heretofore, on to wit, the 6th. day of June, 1934, and for a long time prior thereto, the defendant owned, controlled and operated a telephone system for the benefit of itself and its patrons in the City of Washington, in the District of Columbia; that the said system of telephones was operated by the use of wires, receivers, transmitters and electricity; that the plaintiff, on to wit, the aforesaid date, was a Captain of the United States

Navy engaged in service to the Government of the United States of America and attached to the United States Naval Observatory in the City of Washington, in the District of Columbia; that the defendant, prior to the aforesaid date,
had installed a telephone system consisting of wires,
4 receivers, transmitters and electricity in the United
States Naval Observatory for the use of the Government of the United States of America and its employees, which telephone system was controlled, maintained and operated by the defendant; and that on the aforesaid date, to wit, the 6th. day of June, 1934, the aforesaid telephone system and apparati were in use at the United States Naval Observatory aforesaid; That it then and there became and was the duty of the defendant to exercise ordinary care and diligence to keep its telephones, wires and apparati in a safe condition so as not to injure patrons, and more particularly this plaintiff; yet, the defendant, notwithstanding its duty as aforesaid and negligently disregarding the same, and while the plaintiff was in the discharge of his duties as a naval officer in the United States Naval Observatory aforesaid, and while in the exercise of due care, attempted to use one of the telephones installed by the defendant, and in so doing and while the receiver of the said telephone was about 3 or 4 inches distant from the right ear of the plaintiff, the said plaintiff was suddenly and violently struck by lightning and electricity which came through the receiver of the said telephone by reason of the negligence of the defendant, whereby the plaintiff was painfully and permanently injured about his head, and more particularly the plaintiff was painfully and permanently injured about his right ear, and as a result thereof, he was caused to lose his sense of hearing through his right ear and he was caused to lose, to wit, (90%) Ninety per cent of his eye sight, all of which has permanently injured the plaintiff; that as a result of the aforesaid injuries caused by the negligence of the defendant as aforesaid, the plaintiff was caused to suffer constant and severe headaches and is now suffering therefrom, thereby causing great physical and mental pain and anguish, all of which has permanently in-
jured the plaintiff, and has caused the plaintiff to be
5 confined to bed for long periods of time, and will in

the future cause the plaintiff to be confined to bed; that all of the aforesaid injuries sustained by the plaintiff have permanently disabled the plaintiff from engaging in his normal recreational activities, to wit, playing tennis, shooting, attending theaters and moving pictures and operating an automobile at night, by reason of his being unable to see and hear, as aforesaid; that as a result of the aforesaid injuries, the plaintiff was caused to expend large sums of money for medical treatment and attention and travel in his endeavor to be cured of the aforesaid injuries.

That the defendant removed its appliances, equipment and apparati from the United States Naval Observatory on, to wit, the 7th. day of June, 1934, thereby preventing the plaintiff and others from inspecting said equipment, etc. to determine the cause of the lightning being carried through the said equipment which caused the aforesaid injuries, and that the cause of same is solely within the knowledge of the defendant and its agents, servants and employees.

Wherefore, by reason of the premises, the plaintiff claims damages of the defendant in the sum of One Hundred Thousand Dollars ($100,000.00) besides costs.

WALTER M. BASTIAN
per H H B

HARRY H. BETTELMAN
Attorneys for plaintiff

Pleas of the Defendant

Filed September 4-1936

* * *

The defendant, The Chesapeake and Potomac Telephone Company (sued herein as "Chesapeake & Potomac Telephone Company"), for plea to the first count of the declaration of the plaintiff filed herein, says:

6 1. It admits that it is a quasi-public corporation, that on the 6th day of June, 1934 and for a long time prior thereto, it owned, controlled and operated a telephone system for the benefit of itself and its patrons in the City of Washington, in the District of Columbia, and that said system of telephones was operated by the use of wires, re-

ceivers, transmitters and electricity, as in said count of said declaration alleged.

2. It admits that on, to wit, June 6, 1934, plaintiff was a captain in the United States Navy, engaged in service to the Government of the United States of America, and attached to the United States Naval Observatory, in the City of Washington, in the District of Columbia, as in said count of said declaration alleged.

3. It admits that prior to June 6, 1934 it had installed a telephone system, consisting of wires, receivers, transmitters and electricity, in the United States Naval Observatory for the use of the Government of the United States and its employees, which telephone system was controlled, maintained and operated by it, and that on the said 6th day of June, 1934 the said telephone system and apparatus were in use at the United States Naval Observatory, as in said count of said declaration alleged.

4. It denies that there was imposed upon it any such duty respecting its telephones, wires and apparatus as that alleged in said count of said declaration.

5. It denies that notwithstanding its duty in the premises and negligently disregarding the same, while the plaintiff was in the discharge of his duties as a naval officer in the said United States Naval Observatory, and while in the exercise of due care, attempted to use one of the telephones installed by it, and in so doing and while the receiver
7 of said telephone was about three or four inches distant from the right ear of the plaintiff, the said plaintiff was suddenly and violently struck by lightning and electricity which came through the receiver of said telephone by reason of the negligence of the defendant, whereby the plaintiff was painfully and permanently injured about his head and more particularly, plaintiff was painfully and permanently injured about his right ear, and as a result thereof the plaintiff was caused to lose his sense of hearing through his right ear, and he was caused to lose, to wit, twenty-five per cent. of his eye sight, all of which has permanently injured the plaintiff, as in said count of said declaration alleged.

6. It denies that as a result of any of said injuries alleged to have been caused by the negligence of the defendant, the

plaintiff was caused to suffer constant and severe headaches and is now suffering therefrom, thereby causing great physical and mental pain and anguish, all of which has permanently injured the plaintiff and caused the plaintiff to be confined to bed for long periods of time, and will in the future cause the plaintiff to be confined to bed, as in said count of said declaration alleged.

7. It denies that any or all of the injuries alleged to have been sustained by the plaintiff have permanently disabled the plaintiff from engaging in his normal recreation activities, such as playing tennis, and otherwise, as in said count of said declaration alleged, and denies that as a result of said injuries the plaintiff was caused to expend large sums of money for medical treatment and attention and travel in his endeavor to be cured of the aforesaid injuries.

8. It denies that it removed its appliances, equipment and apparatus from the United States Naval Observatory on the 7th day of June, 1934, thereby preventing the
8 plaintiff and others from inspecting said equipment,
etc. to determine the cause of the lightning and electricity being carried through the said equipment, allegedly causing the injuries complained of, and denies that the cause of said injuries is solely within the knowledge of the defendants and its agents, servants and employees.

9. It denies that by reason of any negligent act of this defendant, plaintiff suffered any injury or damage, as in said count of said declaration alleged.

Plea to the second count.

The defendant, The Chesapeake and Potomac Telephone Company, for plea to the second count of the declaration filed herein, says:

1. It admits that it is a quasi-public corporation, that on the 6th day of June, 1934 and for a long time prior thereto, it owned, controlled and operated a telephone system for the benefit of itself and its patrons in the City of Washington, in the District of Columbia, and that said system of telephones was operated by the use of wires, receivers, transmitters and electricity, as in said count of said declaration alleged.

2. It admits that on, to wit, June 6, 1934, plaintiff was a captain in the United States Navy, engaged in service to

the Government of the United States of America, and attached to the United States Naval Observatory, in the City of Washington, in the District of Columbia, as in said count of said declaration alleged.

3. It admits that prior to June 6, 1934 it had installed a telephone system, consisting of wires, receivers, transmitters and electricity, in the United States Naval Observatory for the use of the Government of the United
9 States and its employees, which telephone system was controlled, maintained and operated by it, and that on the said 6th day of June, 1934 the said telephone system and apparatus were in use at the United States Naval Observatory, as in said count of said declaration alleged.

4. The allegation of said count of said declaration respecting the duty imposed upon the plaintiff and the care to be exercised by it to keep its telephones, wires and apparatus in a safe condition so as not to injure its patrons, and more particularly the plaintiff, states merely a conclusion of law which this defendant is neither called upon to admit nor deny.

5. It denies that notwithstanding its duty in the premises and negligently disregarding the same, while the plaintiff was in the discharge of his duties as a naval officer in the said United States Naval Observatory, and while in the exercise of due care, attempted to use one of the telephones installed by it, and in so doing and while the receiver of said telephone was about three or four inches distant from the right ear of the plaintiff, the said plaintiff was suddenly and violently struck by lightning and electricity which came through the receiver of said telephone by reason of the negligence of the defendant, whereby the plaintiff was painfully and permanently injured about his head and more particularly, plaintiff was painfully and permanently injured about his right ear, and as a result thereof the plaintiff was causd to lose his sense of hearing through his right ear, and he was caused to lose, to wit, twenty-five per cent. of his eye sight, all of which has permanently injured the plaintiff, as in said count of said declaration alleged.

6. It denies that as a result of any of said injuries alleged to have been caused by the negligence of the defen-

dant, the plaintiff was caused to suffer constant and severe headaches and is now suffering therefrom, thereby causing great physical and mental pain and anguish, all
10 of which has permanently injured the plaintiff and
caused the plaintiff to be confined to bed for long periods of time, and will in the future cause the plaintiff to be confined to bed, as in said count of said declaration alleged.

7. It denies that any or all of the injuries alleged to have been sustained by the plaintiff have permanently disabled the plaintiff from engaging in his normal recreation activities, such as playing tennis, and otherwise, as in said count of said declaration alleged, and denies that as a result of said injuries the plaintiff was caused to expend large sums of money for medical treatment and attention and travel in his endeavor to be cured of the aforesaid injuries.

8. It denies that it removed its appliances, equipment and apparatus from the United States Naval Observatory on the 7th day of June, 1934, thereby preventing the plaintiff and others from inspecting said equipment, etc. to determine the cause of the lightning and electricity being carried through the said equipment, allegedly causing the injuries complained of, and denies that the cause of said injuries is solely within the knowledge of the defendants and its agents, servants and employees.

9. It denies that by reason of any negligent act of this defendant, plaintiff suffered any injury or damage, as in said count of said declaration alleged.

R. A. VAN ORSDEL
GEO. P. HOOVER
Attorneys for Defendant.

---

11 *Joinder of Issue.*

Filed September 8-1936

* * *

The plaintiff joins issue on the Pleas of the defendant filed on the 4th. day of September, 1936.

HARRY H. BETTELMAN
WALTER M. BASTIAN
per H H B
Attorneys for Plaintiff

Note of Issue.

HARRY H. BETTELMAN, and
WALTER M. BASTIAN *Attorneys for Plaintiff.*

R. A. VAN ORSDEL, and
GEORGE P. HOOVER. *Attorneys for Defendant.*

Notice of Trial.

TO:
R. A. VAN ORSDEL,
725 13th. Street, N. W.
and
GEORGE P. HOOVER,
Investment Building,
Attorneys for Defendant.

Please take notice that the issue joined in the above captioned cause will be tried at the next term of court.

HARRY H. BETTELMAN
WALTER M. BASTIAN
per H H B
Attorneys for Plaintiff.

12 *Memoranda*

MARCH 8-1938.

Notice of taking of testimony De Bene Esse of Dr. Stephen G. Rothwell—filed.

APRIL 25-1938.

Jury sworn and respited from time to time to May 3, 1938.

MAY 3-1938.

Verdict directed in favor of Defendant—Luhring, J.

Motion for New Trial.

Filed May 6-1938

* * *

Comes now the plaintiff and moves the Court to grant him a new trial in the above-entitled cause, and for grounds therefore respectfully advance the following:

1. That the Court erred in ruling on matters of evidence.
2. That the Court erred in ruling on matters of law.
3. That the Court erred in granting the defendant's motion to direct a verdict for the defendant.
4. That the Court erred in directing a verdict for the defendant.
5. And for other reasons to be presented at the hearing hereof.

WALTER M. BASTIAN
per H H B.
HARRY H. BETTELMAN
H. MAX AMMERMAN
per H. H. B.
Attorneys for Plaintiff.

---

13 District Court of the United States for the District of Columbia

Friday, July 1, 1938.

Session resumed pursuant to adjournment, Hon. O. R. LUHRING, Justice, presiding.

* * *

Upon consideration of the motion filed herein, for a new trial, the same having been heretofore duly argued and submitted to the Court, it is ordered that said motion be, and the same is hereby denied, and judgment on verdict is ordered.

Wherefore, it is considered that plaintiff take nothing by this action, that defendant go hence without day, be for nothing held and recover of plaintiff its costs of defense to be taxed by the clerk and have execution thereof.

Memoranda

JULY 7-1938.

Appeal noted by Plaintiff in open Court. Cost Bond fixed at $100 or $50 cash.

JULY 12-1938.

$50 cash deposited in lieu of bond on appeal.

JULY 22-1938.

Date for filing Bill of Exceptions extended from time to time to and including October 4, 1938.

14

Assignment of Errors.

Filed August 30 1938

* * *

The plaintiff hereby assigns as errors committed by the Trial Court in the above-entitled cause the following:

1. Error of the Court in directing the jury to return a verdict for the defendant;

2. Error of the Court in ruling as a matter of law that the plaintiff's injury was caused by an Act of God;

3. Error of the Court in ruling as a matter of fact and law that lightning was the sole cause of the injury to the plaintiff;

4. Error of the Court in ruling as a matter of law that the applicable test of the degree of care to be exercised by the defendant to be applied herein was whether the defendant used the standard equipment used by other companies engaged in business similar to that of the defendant;

5. Error of the Court in ruling as a matter of law that the defendant was not negligent in failing to use certain existing known and approved safety appliances which were not used by other telephone companies;

6. Error of the Court in ruling as a matter of law that the doctrine of res ipsa loquitur was inapplicable under the evidence;

7. Error of the Court in ruling, (a) that the evidence adduced failed to establish specific acts of negligence; and (b), that having undertaken to establish specific negligence and failing to establish same the plaintiff was precluded from relying on the doctrine of res ipsa loquitur;

8. Error of the Court in ruling that the defendant was not required to exercise the highest degree of care in the manner in which it installed and maintained its telephone equipment at the Naval Observatory;

15 9. Error of the Court in ruling that there was no proof of any specific act of negligence which co-

operated with the lightning to produce the injury to the plaintiff;

10. Error of the Court in ruling as a matter of law that there was a failure of proof of negligence on the part of the defendant.

HARRY H. BETTELMAN
H. MAX AMMERMAN
Attorneys for Plaintiff

Service of a copy of the foregoing Assignments of Error acknowledged this 5th day of August, 1938.

GEO. P. HOOVER
Attorney for Defendant.

Memorandum

SEPTEMBER 20-1938.

Proposed Bill of Exceptions—filed.

District Court of the United States for the District of Columbia

Monday, October 17, 1938

The Court resumes its sessions pursuant to adjournments, the Justices sitting in Civil Court, presiding.

* * *

Come now the parties hereto by their respective attorneys of record, and thereupon they present to the Court the Narrative Statement of Testimony taken at the trial of this cause, and pray that the same be signed and made of record, which is hereby accordingly done.

O. R. LUHRING, *Justice.*

---

16 *Stipulation on Appeal.*

Filed October 17 1938

* * *

It is hereby stipulated and agreed by and between counsel for plaintiff and counsel for defendant that in making up the transcript of record on the appeal in the above entitled cause, all photographs, specimens of telephone equipment and reproductions hereinafter described need not be incorporated as a part of the transcript of record on said appeal:

1. Photograph of telephone instrument on plaintiff's desk (Plaintiff's Exhibit No. 1).

2. Photograph, view of plaintiff's office, looking southwest (Plaintiff's Exhibit No. 2).

3. Photograph showing telephone equipment under desk of plaintiff (Plaintiff's Exhibit No. 3).

4 to 12. Small photographs showing views and location of wiring in attic of Naval Observatory (Plaintiff's Exhibits Nos. 4 to 12, both inclusive).

13. Photograph of plaintiff and witnesses Robertson and Dickey in office of plaintiff (Plaintiff's Exhibit No. 13).

14. Photograph, front view, private branch exchange switchboard in Naval Observatory (Plaintiff's Exhibit No. 14).

15. Panel, containing jacks (Plaintiff's Exhibit No. 15).

16. Panel, containing signal lamps (Plaintiff's Ex-
17 hibit No. 16).

17. Cord, with plug attached to end (Plaintiff's Exhibit No. 17).

18. Telephone equipment, consisting of outside jack and operator's key (Plaintiff's Exhibit No. 18).

19. Telephone equipment, consisting of listening key and ringing key (Plaintiff's Exhibit 19).

20. Photograph of terminal box in attic, showing telephone wires (Plaintiff's Exhibit No. 20).

21. Photograph showing rear view of switchboard at Naval Observatory (Plaintiff's Exhibit No. 21).

22. Photostatic copy of records of Bureau of Medicine and Surgery, United States Navy, pertaining to plaintiff, covering the period from 1924 to 1935, inclusive (Plaintiff's Exhibit No. 22).

23. Photograph made by Edmonds of right eye of plaintiff (Plaintiff's Exhibit No. 23).

24. Chart showing condition of eye of plaintiff, made by the witness, Dr. Norman P. Scala (Plaintiff's Exhibit No. 24).

25. Chart showing physiological blind spot of eye, produced by the witness, Dr. Norman P. Scala (Plaintiff's Exhibit No. 25).

(a) Section of cable.

(b) Coil of wire.

(c) American Telephone and Telegraph Company Specification No. 3853, March 1, 1917.

(d) Specimen protector block.

(e) Section of porcelain tubing.

(f) Switchboard relays.

18 It is hereby further stipulated and agreed that on the hearing of said cause in the United States Court of Appeals for the District of Columbia, the foregoing photographs, specimens of telephone equipment and reproductions shall be produced and exhibited in said Court by the parties to this cause, and either party to said cause shall have the right to refer to, use and rely on so much of the aforementioned photographs, specimens of telephone equipment and reproductions as he or it may desire, with the same force and effect as if the same were produced at large in the transcript of record, or sent up with it.

And it is hereby further stipulated and agreed that by entering into this stipulation the parties hereto do not waive, but expressly reserve, the right to apply to the United States Court of Appeals for the District of Columbia for an order for the production in said Court of the photographs, specimens and reproductions hereinbefore described, if so advised.

Signed this 12th day of October, 1938.

HARRY H. BETTELMAN
H. MAX AMMERMAN
per H. H. B.
Attorneys for Plaintiff.

GEO. P. HOOVER
Attorney for Defendant.

19 *Designation of Record.*

Filed July 22 1938

* * *

Comes now the defendant in the above-entitled cause and designates the following to constitute the transcript of record for filing in the United States Court of Appeals for the District of Columbia, and requests the Clerk to include therein:

1. Declaration of the plaintiff.
2. Pleas of the defendant.
3. Joinder of issue, note of issue and notice of trial.
4. Memorandum: Notice for taking of testimony De Bene Esse of Dr. Stephen G. Rothwell.
5. Memorandum: Swearing and respiting of Jury.
6. Memorandum: Court directing jury to return verdict for defendant.
7. Memorandum: Jury's verdict for defendant.
8. Motion of plaintiff for new trial.
9. Memorandum: Motion for new trial overruled and judgment on verdict entered on July 1, 1938.
10. Memorandum: Appeal noted in open Court by plaintiff and costs bond fixed and approved.
11. Memorandum: Deposit of cost bond on appeal.
12. Memorandum: Extension of time to file bill of exceptions.
13. Memorandum: Filing of bill of exceptions.
14. Memorandum: Bill of exceptions settled, approved and ordered of record.
15. Assignments of error.
16. Bill of exceptions.

20 17. This designation of record.

HARRY H. BETTELMAN
H. MAX AMMERMAN
per H H B.
Attorneys for Plaintiff.

Service of a copy of the foregoing designation of record acknowledged this 21st day of July, 1938.

GEO. P. HOOVER
By R. D. C.
Attorney for Defendant.

Additional Designation of Record

Filed October 18 1938

* * *

Comes now the plaintiff in the above-entitled cause and designates in addition to the original designation of record, the following to be included in the transcript of record for filing in the United States Court of Appeals for the District of Columbia, and requests the Court to include therein:

1. Stipulation on appeal.
2. This additional designation of record.

HARRY H. BETTELMAN
H. MAX AMMERMAN
per H H B.
Attorneys for Plaintiff

I consent to the foregoing additional designation of record, and acknowledge receipt of a copy of same this 18th day of October, 1938.

GEORGE P HOOVER
per H H B
Attorney for Defendant

---

21 District Court of the United States for the District of Columbia

United States of America,
District of Columbia. ss:

I, Charles E. Stewart, Clerk of the District Court of the United States for the District of Columbia, hereby certify the foregoing pages numbered from 1 to 20, both inclusive, to be a true and correct transcript of the record according to directions of counsel herein filed, copies of which are made part of this transcript, in cause No. 87884 at Law, wherein Julius F. Hellweg is Plaintiff and Chesapeake & Potomac Telephone Company, a corporation, is Defendant, as the same remains upon the files and of record in said Court.

IN TESTIMONY WHEREOF, I hereunto subscribe my name and affix the seal of said Court, at the City of Washington, in said District, this 20th day of October, 1938.

C. E. STEWART,
(Seal) *Clerk.*

22 Endorsed: United States Court of Appeals for the District of Columbia Filed Oct 22 1938 Joseph W. Stewart, Clerk.

In the District Court of the United States for the District of Columbia

At Law No. 87,884.

JULIUS F. HELLWEG, *Plaintiff*,

v.

THE CHESAPEAKE AND POTOMAC TELEPHONE COMPANY, A CORPORATION, *Defendant*.

Narrative Statement of Testimony.

BE IT REMEMBERED that the above-entitled cause came on for trial on April 25, 1938, ending May 3, 1938, before Mr. Justice Luhring and a jury duly empanelled and sworn to try the issues between the plaintiff, JULIUS F. HELLWEG, and the defendant, THE CHESAPEAKE AND POTOMAC TELEPHONE COMPANY, a corporation, parties to said cause, and proceedings were had, rulings made by the Court and exceptions duly taken and noted as follows:

And thereupon, after the jury had been duly sworn, the plaintiff, **Julius F. Hellweg**, to maintain the issues on his part joined, after having been sworn, testified as follows:

My name is Julius Frederick Hellweg. I live at No. 3901 Connecticut Avenue, Northwest. I am superintendent of the United States Naval Observatory. I am a naval officer (Tr. p. 8). I am Captain on the Retired List. I am a graduate of the United States Naval Academy at Annapolis, having graduated in 1900, and have been in the naval service since that time. As superintendent I am in complete charge of the United States Naval Observatory.

23 I went to the Naval Observatory in June, 1930, and I have been stationed there ever since. I was there on June 6, 1934, the day of this accident (Tr. p. 9). Immediately preceding the accident, there were three people in the office. I was having a conference with the Director of the Nautical Almanac Office, Dr. Robertson, and the chief clerk, Mr. Dickey. About that time it began to rain, and the messenger whose name is Fraction, came into the office and began closing the windows because wind was

blowing the rain in through the southwest windows. This happened in the afternoon, nearing 4 o'clock. I can not say whether it was before or just after 4 o'clock, but I think it was before 4 o'clock, as it began to rain. I decided to try to get in touch with my wife who was visiting Mrs. Alderman (Tr. pp. 10, 11). I wanted to get in touch with my wife, and I put through a call to Mrs. Alderman's home where my wife was visiting. The telephone in my office is secured on the right side of the desk. It is one of these telescopic arrangements so you can push it out of the way or bring it close to you, which is common in many offices.

Thereupon there was exhibited to plaintiff a photograph of his office, and after having examined it, he testified, this shows my office with the attachment of the telephone closed up (Tr. p. 11). This photograph does fairly represent the position in which my telephone is on the desk.

Whereupon, said photograph was marked for identification "Plaintiff's Exhibit No. 1."

Thereupon there was exhibited to plaintiff a photograph
showing another view in his office, and after having
24 examined it he testified that it showed the north side
of the desk and that it reasonably represents the
position of that telephone.

Whereupon said photograph was marked for identification "Plaintiff's Exhibit No. 2," (Tr. p. 12).

Whereupon said photographs, marked for identification, were offered and received in evidence and marked respectively "Plaintiff's Exhibits 1 and 2," (said exhibits are omitted from this bill of exceptions pursuant to stipulation of counsel), (Tr. p. 13).

Witness resuming testified, I was 59 years of age, my last birthday, and I was born on the 16th of March, 1879.

Witness, in explaining how he used this telephone, testified that this photograph (Plaintiff's Exhibit No. 1) shows the telephone arm which had been secured to the side. It merely holds the receiver at the same relative distance from the mouthpiece that my mouth is from my ear, and that in order to keep the hook down when the telephone is not in use, I have a separate spring, with a hook which secures that held down against the connection of the telephone. When you take the telephone off the hook this receiver is, of course, in use and I merely take the hook off and that allows the arm to wind up and the earpiece and the mouthpiece are then in connection with the telephone central (Tr. p. 15). My purpose in doing that was, when I have that hook off the telephone is always in contact or in connection with the telephone central.

Thereupon, there was produced what purported to be a reproduction of the telephone equipment which was on the desk of plaintiff on June 6, 1934.

25 (Pursuant to stipulation of counsel said reproduction of said telephone equipment will be produced in court at the hearing of this cause.)

Thereupon witness was asked to examine that telephone there and see if that reasonably represents the telephone which was in his office on June 6, 1934, and he testified, this rigging is, with the exception of the spring, just like mine (Tr. p. 16). As to whether the arm is the same as the arm I had on my telephone, I can not tell here it is the same, but the distance looks pretty certain—I am not certain that it is the very thing.

I do not think the telephone receiver in use in my office was as close to the mouthpiece on this telephone as it was on the one in my office. That is too close to my head and my ear. The distance from here to here (indicating) is about the same distance from my mouth to my ear. This reproduction shows how I had constructed that arm on the telephone. I had that arm made, because it takes so long to get the telephone central to answer the telephone, and after the telephone central answers it takes so long to get the other man on the wire, and I have so many duties to perform at the Observatory that I began to devise ways by which I could save time. The first year I was there I found I wasted over twenty per cent of my time by waiting on the telephone. So I thought this arrangement would permit me to go ahead with my work, and then when I was in my office I could lean over and talk and after that I saved the time which previously had been wasted. The material used for the construction of the equipment
26 for holding the receiver was sheet brass, we usually used, and painted black, and the spring was made of brass (Tr. pp. 17 and 18).

The way the arm on this exhibit is attached reasonably represents the manner in which the arm was attached to my telephone. I think that is just about the same.

Witness, using the reproduction of the telephone equipment for the purpose of explaining how he used the telephone on June 6, 1934—the day of the accident—testified that whenever I wanted to make a call on the telephone I would take the hook off. That raises this arm and gives me connection with the switchboard in my lower hall, and as soon as I hear his voice I give him the number through the telepone like this (illustrating). The telephone receiver does not touch my ear at the time (Tr. p. 18). The mouthpiece does not touch me at all. It did not at that time. I never got near the mouthpiece. It would be about the distance from my chair to the side of the desk.

Explaining how he used this telescopic equipment, witness testified, when the telephone is not in use, it is shoved back out of the way so that it won't interfere with the top of my desk, when I want to telephone I bring it to me like that (illustrating). Then, after making the call, I can do what I want to until I get the answer. In this case I made the call—I called Mrs. Alderman on 24th Street in whose home my wife was visiting at the time. I do not remember what the address was on 24th Street. It was on 24th Street where R Street runs into Massachusetts Avenue. It is in the first block north of Massachusetts Avenue, in the block below California Street. 27 between California Street and the next street, I do not remember the name of that. I do not know the distance in blocks from the Observatory. It is not very far (Tr. p. 19). The entrance to the Observatory is at 34th Street and Mrs. Alderman is on 24th Street. At the time I made this telephone call to Mrs. Alderman, I took the hook off the receiver, pulled the telephone toward me, and gave the operator at my switchboard the number. Then when he got the city central, that is, the Decatur central, I gave her the number. My telephone at the Observatory is Decatur 2723. That was the number on the day of the accident, it has always been the same number. I do not remember in what exchange Mrs. Alderman's telephone was (Tr. p. 20). After I had placed the call for Mrs. Alderman's home, I continued my discussion with Dr. Robertson and Mr. Dickey, and after awhile apparently the call was put through and just as I leaned over to make the call, just about that time, I do not know what happened but I felt this pain in my ear as if someone had stuck a needle or a long pin or something in it. I could feel it inside and I was thrown back in my chair.

Describing how he fell back, witness testified, I was leaning forward, because the telephone was some distance from my chair, and I was leaning forward and it happened,—all I know is I was thrown back in the chair, and the next thing I knew I was holding my head because it felt like my head was getting peculiar and I grabbed my head and held it. I had a very splitting headache and I had to leave my office soon after that and go home.
28 At the time or immediately before the time this thing happened, I had made the contact with Mrs. Alderman's telephone. I said something to her. I do not remember now whether I said "Hello", or not. I probably just said "Good evening, Mrs. Alderman", or something, I do not know what it was, when this thing hit me and I do not know anything else. I had talked to Mrs. Alderman before that on many occasions (Tr. pp. 21, 22).

This telescope and this arm on the telephone were always there. We had had the arrangement or such an arrangement for many years. I put on this arm to hold the receiver probably within six months or a year after I took command, either in 1930 or early in 1931. It was at that time that I applied this spring to the arm that holds the receiver ordinarily on a telephone. I have used it in that manner ever since (Tr. p. 22). I have used it since the accident in that manner and I now use it in that manner.

Immediately after this pain, there was a terrific crash of lightning, or rather the noise is thunder, that came through the southwest window in the direction of the British Embassy, and the noise sounded as if it was down at the British Embassy, but of course we can not locate—just in that direction. It did not come through the other windows. It came through this one over there, over here (indicating southwest window). In my office at that time there were two wide single windows and one double window. The window to the southeast is a big single window, very tall. The windows to the south are double. The double windows to the south are directly back of my chair (Tr.
29 p. 23)

Thereupon, there was placed upon the blackboard a drawing purporting to represent the floor plan of the office of plaintiff in the Naval Observatory (pursuant to stipulation of counsel said floor plan will be exhibited in court at the hearing on this cause).

Whereupon witness examined said floor plan upon the blackboard and after having done so testified that it reasonably represents the floor plan of his office, and indicated thereon the location of his desk (Tr. p. 24).

Using the floor plan to illustrate, witness pointed out the location of his desk and that he sat in a position facing toward the door, which is about north. Describing his office as indicated on the floor plan, witness testified, here are the big double windows at the back, and then there is a further tall single window over here in this corner. There is a big long single window, but those single windows are as wide as these windows, even wider, and they go clear up to the ceiling. Physically we can not reach them. Over here is a table on which I keep copies of all the publications and have kept them for 25 years, which we frequently have to refer to. Over here is a long book rack which contains the various books that we require, and I have books in here and also over here (indicating). This is a desk in the corner where I have a typewriter which I use when I have occasion to write any letters personally. There is a window in the southwest corner and a window in the southeast corner (Tr. p. 25). There is a south window and a window which faces to the west and it is through this window that the noise of the thunder was heard. That is the southeast window, and the British Embassy is right in that direction, southeast. You can see the top of the British Embassy building from that window.

It was in the right ear that I felt the pain. After this thing happened, almost or probably within fifteen minutes, I notified the telephone company that something had happened, I did not know what. I do not know with whom I spoke at the telephone company. I merely notified the manager's office. I called them by phone (Tr. p. 26). I called them from the phone in my office, this same telephone, the same telephone I had been using in talking to Mrs. Alderman. As to whether the telephone operated at that time, the telephone was hard to get a connection. I had

considerable difficulty in getting central to answer my telephone call. I did have difficulty in getting my own switchboard to answer. I do not know what period of time was taken before I got a reply from my own switchboard in the building. A Mr. Cook was operating the switchboard in the building at that time (Tr. p. 27). He is one of the men on the switchboard. I went home a short time after this occurrence. I can not describe how I felt immediately after that. I was all upset. My head throbbed terribly. My head felt like—my first impression was that it was going to keep on going until it would burst. I went home. I did not go to get my wife. When I got home I went to bed. I did not call a physician at that time, it was after office hours, and I went the next morning, the first thing.
I did not call my wife after that. The next morning
31 I went to a doctor at the Naval Dispensary, here in
Washington (Tr. p. 28). I was examined at that time by Dr. Brown, I believe. After seeing Dr. Brown, I went home and stayed home. I stayed home probably all that day and the early part of the next day. The day following the accident I went to the office for a very short time. It is hard to describe how I felt on that day following the accident. It was a very uncertain feeling. It was a new feeling and I had never had it before. My head ached. My head has ached ever since. I have a headache every day (Tr. pp. 29 and 30). The day after the accident my head ached all day. The day of the accident, that night, I took some dope so I could sleep. I can not answer now whether I did sleep. I do not remember. Since the accident I have this splitting headache every afternoon. It usually lasts from three to four hours. It comes in the afternoon and usually runs until 7 or 8 o'clock at night. Before this accident I never had any headaches at any time (Tr. p. 30).

The next time I went to a doctor was while I was on leave, that was either in August or September. He lived in New Bedford, Massachusetts, and his name was Dr. S. G. Rothwell. He was an eye and ear man in New Bedford. I was on my vacation and was visiting a sister-in-law in New Bedford. Dr. Virginius Dabney made an examination of me. He made two examinations. I do not recall just when that was, but between the time of the accident and the time I went on leave, Dr. Dabney examined my ears. Dr. Dab-

ney made this examination for the benefit of the telephone company. Between the date of the accident and the
32 time Dr. Dabney made this examination, I did experience pain or difficulty with my ears, but the eye troubles did not begin until afterward. The difficulty I experienced with my ears was that I had a confused sound or a confusion of sound in the ear, in the right ear. That has been intermittent, that confused sound. Sometimes now I have it. It has gotten worse since the day of the accident. I can hear some sounds through my right ear at this time. Some sounds I can not hear (Tr. p. 32). I can hear the lower notes. I can not hear the higher ones. I can not hear a watch. I have not heard my watch in four years, since this accident. I can hear better with my left ear than I can with my right ear. I never had any difficulty with my right ear before the accident. The first time I noticed any trouble with my eyes was, I think, when I was trying to play tennis. That was the same summer. What happened to attract my attention to my eyes was that the ball was not clear, I would miss it. I could not see the ball. I have played tennis all of my life. I reached the semi-finals in tennis in the Fleet Championship, (Tr. p. 33). That was in 1930, down at Guantanamo Bay. We were having a championship among the officers in the Fleet. I quit playing tennis. As a result of that experience I went to see Dr. Tribble and Dr. Scala who had their offices at that time at 18th and Eye Streets, Northwest, in this city. Before I went to them I went repeatedly to the Navy Surgeons at the hospital and the Dispensary (Tr. p. 34). I did not wear glasses before this accident happened. I did not have to wear glasses. I can not answer when I first se-
33 cured eye glasses to wear, but it was after the accident, maybe six months, I do not remember. There were different doctors who prescribed glasses for me. Dr. Brown was one. That was at the Naval Dispensary, and then there was another doctor named Hooker, and then there were two other doctors, but I do not recall their names. My eyes were first examined by Dr. Brown, the next morning after the accident. I should say I first experienced difficulty with my eyes within a couple of months of the accident. I went back to the Naval Dispensary then, and they prescribed glasses, both distance glasses and read-

ing glasses. They prescribed two pairs of glasses, two pairs of glasses, both kinds of glasses (Tr. p. 35). Since then I have probably bought a half dozen pairs of glasses, because my eyes are changing so fast. My eyes unfortunately are getting weaker, very much weaker. I can not see as well with the right eye as I can with the left one. I can see better with my left eye than with my right eye. Before this accident my eyes were 20/20, both. By that, I mean I had perfect eyesight. I think my last physical examination was in 1923 (Tr. p. 36). I went to Dr. Rothwell, while I was on leave. After that I went to Dr. Trible and Dr. Scala. I do not remember when that was. There was one visit to Dr. Trible not very long after I came back from my vacation. I can not answer how many occasions I have seen him since that time. I have seen him a number of times, but I can not tell how many times. Before this accident I had never had occasion to visit Dr. Trible for my eyes or ears. Dr. Trible took my tonsils out. I
34 did not know Dr. Scala before this accident happened. He is an eye specialist. Dr. Trible does the ear work and Dr. Scala does eye work. Dr. Scala took about two or three weeks working on my eyes. He made all kinds of tests and had photographs taken and sent me to another place in town where they took pictures of the back of the eyes. He prescribed about four pairs of glasses for me. The last time I saw him was three or four days ago and I saw Dr. Trible at the same time. They both examined me, each one for his own specialty, but I have also been examined by Naval doctors since. I went to a Naval doctor quite recently. That was Dr. Hooker at the Naval Dispensary. They were having a clinic there for ears, eyes and throat (Tr. p. 38).

As a Naval officer I am required to undergo medical examinations once a year. Since the day of the accident I have undergone these medical examinations twice—three times. No, I am wrong—about three times; not more than that. These examinations are usually made at the Naval Dispensary, but because of the eye condition and the ear condition, they sent me to the Naval Hospital where they made special examinations. I am still in active service but I am classified as a retired officer.

At the time of this injury the whole side of my head was sore and red, (Tr. p. 39). With my own eyesight, I observed that my head was red on this side, the whole bald spot was red. The right side was all red and right here about the temple there were three or four funny looking lumps, like nodules. I did not have those before that. I had nothing. They were blisters. There were blis-
35 ters, but not in the sense you mean a blister. It was a real blister, but the whole head was inflamed, and it was just like one big blister. There was no water under the surface of the skin. The skin sloughed off. It just seemed to dry up and slough off and it still does that. Prior to the accident my skin did not slough off and I never had any skin disease (Tr. p. 40). There is not very much of my hair to burn. I can not answer whether my hair was burned on that occasion. I know the whole side of my head and face was very sore. That sore feeling continued two or three days, maybe, or four days; I don't remember. I saw nothing of any flame or spark when I felt this pain in my ear. No flash of any kind. I saw nothing. This thing hit me so quick, it knocked me back in the chair. At the time I felt this pain in my head, I was looking straight in front of me, to the officer to whom I was talking. That was Mr. Dickey, seated on the opposite side of the desk facing me. He was facing east, and I was facing west (Tr. p. 41).

And my telephone was to the right or to the east. A short time after this accident happened two men from the telephone company came out there to my office. They came out just before I left to go home that night. After the accident happend I was in my office probably twenty minutes or half an hour. I do not know what these men did when they came out there. They came into my office and looked at the phone.' They came back the next morning and took all of the wire out. They took the floor up and took the wire from the telephone, through the ceiling and from overhead, and up through the ventilating shaft into the junction
36 box in the attic, (Tr. p. 42).

The call box of the telephone is secured under my desk and the wire comes from that box down through the floor. There is just one plank they had to take up to get to it and the wire runs out to the right, that is, to my right, and comes up through the wall until it gets behind the picture molding, that is the east wall. From there it goes around the east wall to the corner of the north wall and across the north wall to the ventilator, that is, in the north part of my office. That leads up to the attic for ventilation, and the wires run right up through that open space to the attic and from there it goes out to the telephone company's box where all the wires come in (Tr. p. 43).

Thereupon, there was offered and received in evidence a photograph marked "Plaintiff's Exhibit No. 3" (by stipulation of counsel said exhibit is omitted from this bill of exceptions).

Whereupon, plaintiff examined said photograph (Plaintiff's Exhibit No. 3), and testified that said photograph fairly represents the call box under my desk and the position of the wires where it enters the floor under my desk. That is a very excellent picture (Tr. pp. 43 and 44).

Resuming, witness testified, the next morning some men came from the telephone company and took all of that wiring out. I was in my office when they were taking that board up. I can not answer as to how long I remained in my office that morning because I went home again. I do not know how much of the wiring was removed.
37 Later on I examined the attic and could see that there was all new wire up there. I had been up in the attic many times before that. The wire always looked the same. I had never had any occasion to examine that wire in great detail before this accident. I had examined the wires and I had examined everything else up there because I had a new floor put in there, up in the attic. That was two or three years ago, (Tr. pp. 44, 45).

There had not been any change in the telephone wires so far as I knew since the flooring of the attic. The attic is always locked up. The chief clerk and the watchman have a key, and I have one. I have a key to every room in the building. I have a key to every part of the Observatory. There are two keys for the attic, (Tr. p. 45). I have one key and the other key is kept on the key board which is located at the central switchboard. The operator handles all of those keys. Since this accident happened, I have had considerable confusion or sounds in my right ear. By "confusion", I mean I sometimes hear noises which are not

accounted for by anything that is happening around me. As to what kind of noises they are, the most recent one occurred about four days ago when I was examining plans for our new destroyers, and I was leaning over to examine the plan and I heard this funny noise, and I turned to the officer next to me and asked him if he heard the noise, (Tr. p. 46). And when I leaned over it sounded like a pneumatic hammer a long distance away, that is, rat-tat-tat-tat, like this (tapping on chair), as though it was a long distance
away. I had never experienced such noise before the
38 the accident. I never had any noises in my head be-
fore the accident. Before this occasion, a few days ago, and since the accident, I have not experienced that noise exactly that same way, but I have had other noises, (Tr. p. 47, 48). Sometimes the noises were felt more than heard. Sometimes I have a very sharp pain. It hurts me quite considerably and I stop that by putting my finger in my ear and pressing hard. Sometimes it feels as if I had water in my ear, sometimes, as the other day, it sounded like a trip hammer, but very, very muffled, not loud. I have not only had ringing in my ears, I have at times a confusion. Sometimes I hear noises that nobody else hears and sometimes other people hear noises that I do not hear. There is a considerable confusion, (Tr. p. 48, 49). At first the ringing noises in my ears were very frequent. I went to the doctor about it. It does not happen as frequently now, but it is still as painful. In fact, I think the pain is a little bit more acute than before, but it is hard to say. These ringing sensations in my right ear are intermittent. I think it does not come by routine, for instance, just now I have got that pain right in that ear now, and it will probably go off in ten or fifteen minutes. The headaches come every afternoon just as regular as clockwork. They usually come between 3 and 4 o'clock in the afternoon. In fact, I have gotten so now I always look at the clock to check up on it to see whether it is late or early. I never suffered any such pains as that prior to this accident. I did not have any ringing in my ears prior to
this accident, (Tr. p. 49).

39 I did not have any confusion in my left ear prior
to the accident. Since the time of this accident, quite frequently, someone in the office has to tell me that the

phone is ringing. I miss it, and then sometimes I hear the telephone ringing when it is not ringing (Tr. p. 50). That is, I mean it is not ringing. I answer the telephone and the person tells me it is not ringing, and I usually call up central and ask about it. I do have difficulty in hearing, in my right ear. As a matter of fact, I very often have sent for someone else to get the message. If it is an important message I do not trust myself to hear it. I have used the telephone since this accident, but if it is important I use the left ear. For unimportant purposes, I mean just about ordinary calls, it does not make very much difference whether I hear everything or not. I do not now have the telephone re-rigged for my left ear. I took it off. I pull the telephone off the hook. If I am not hearing what is being said, I very often ask the person I am talking with to wait and I take this receiver off and hold it to this ear (indicating left ear). I do that quite often. Before this accident I never had to remove the receiver over to the other side. I did use my left ear while I was at the Naval Observatory. If I had to make a note, I would hold it with my left hand so I could write. That is why I put the arm on there. why I put that gadget on there. I put that gadget on there several years before the accident, (Tr. p. 51, 52).

As to the nature of my work at the Observatory, it is administrative, and I have the details of supervision of all of the navigation equipment for the Navy, and all the tests for the purpose of equipment not only here in Washington but also in New York, and we have the design and maintenance of all types of nautical instruments. My work has quite a good deal to do with science, because the Naval Observatory is the scientific center for the Navy; that is, for anything pertaining to astronomical work, (Tr. p. 52, 53).

As to the nature of the work which I did prior to this accident, well, the investigation of the various phenomena which can only be determined by an examination of multitudinous records, and the daily observations of the solar system bodies, with our structures, the correction of those results and the tabulation and publication of our publications for the use of mariners all over the world. I have to use my eyes excessively, and there is some use, too, of the ear, and I have been compelled to sublet my reading to all of my subordinates. In other words, everything came to me first and I would send it to the men who had the detail of the subject, and now the information is sent to them first and they bring it to my attention if it is necessary for me to go into the details; in other words, it saves me the necessity of a tremendous amount of extra additional reading. I try to save my eyes just as much as I can, because my eyes are failing quite badly. For instance, I am not able to play golf. I was able to play golf before this accident. I have played golf. I can not follow the ball.

I go to theatres, but I can not hear the conversa-
41 tion on the stage unless I am away up front. I go
up front sometimes to get it, but sometimes I do not, particularly if there are people around me talking, I miss it, (Tr. p. 53). With a pair of specially arranged glasses, I can see in the theatre, but I miss details. I can see the general picture. I never had to use any glasses before the accident, and I never had any difficulty in seeing or hearing in the theatre under ordinary circumstances. I never noticed it. Since this accident, in watching the performance of moving pictures, I have this difficulty, that if I watch a picture for any length of time my eyes will hurt and I have to leave. I miss the details. I see the general picture. Sometimes I miss all of the conversation in the moving pictures, sometimes I only miss a part of it. I miss the women's voices more than I do the men's voices. I did not have that difficulty before this accident. The only athletic activity that I have engaged in since the accident is that I can now walk. I can not play golf because if I swing a club and throw my head back I will lose my equilibrium, (Tr. p. 54). I can not watch the flight of a golf ball. I quit that long ago. I have tried since the accident. I tried twice and then I quit. I never was a wonder at golf.

In connection with my duties as Superintendent of the Naval Observatory, I have formed expeditions to travel throughout the world for the purposes of obtaining information pertaining to our solar system. I have been on three expeditions and will have to go to Europe again this summer. I was on these expeditions before the accident.

Prior to the time of the accident there was one solar
42 eclipse—there were two trips. Both were up in the
New England States. On these expeditions my work

was supervisory, (Tr. p. 55). On these two expeditions, prior to the time of the accident, my work is always supervisory. I have charge of whatever work we have. I have charge of all that work and if the work does not move as fast as I want it, I usually jump in and lend a hand. That work requires the use of instruments. In the use of these instruments it is not necessary to use the ears. It requires the use of the eyes. I will take it up—yes, the ears too, when we get the time signals. Since this accident I have been on two expeditions. One trip was to Europe in 1935. I went to France and then to Switzerland and then to England. (Tr. p. 56). At that time my ears did not bother me as much as my eyes. I would close my eyes because of some inconvenience on that trip. I do not think I could perform my duties on these trips as well as I did before. In the year 1935, when I was on this expedition to Europe, my eyes were not as bad then as they are now. At that time I did as little work as I could. I delegated to other people the work, rather than try to do it, myself. The last expedition was last summer, the solar eclipse expedition to the South Seas. On that occasion I made no attempt to use instruments. I made no attempt at all to use the instruments because I did not feel like I should trust my eyes. I had to wear special glasses on that trip and all I did was to boss, and I made no attempt to do any detail work, (Tr. p. 57). The expedition to the South Seas was down in the south latitude, about 147 miles south of the Equator
43 and about 171 degrees west latitude. That was one of the South Sea Islands. That expedition was in June, 1937. On that expedition I was not able at all to perform my duties, (Tr. p. 59, 60). That work requires keen vision and is one which requires keen hearing. I delegated that work to someone else, (Tr. p. 59, 60).

I have written several articles on astronomy, but the big one I never finished. I started that big subject in 1932. After this accident I never touched it. It was too much of a strain and I did not want to risk myeyes. I have tried. I have just quit. The subject on which I was writing was a general compendium of astronomical knowledge. A number of my articles have been published. I never published this book, (Tr. p. 60).

I can not answer how much money I have spent for doctors and medicine as a result of the injury I have sustained, because I have never kept track of it. I think the fee of the doctor in New Bedford may have been $5, or it may have been $10, I don't remember which. I have been to a number of different doctors. I have never kept track of the charges. The fact is that for a period of about two years I went to a doctor twice a week. That was a doctor here in Washington, named—one of them is not here now. I believe the name of one of them was Ketcham. Dr. Ketcham was trying to help my ear. He was an osteopath. He thought he could help the ear. I paid him $2 for each visit, (Tr. p. 62). I do not remember how many visits I made
to him. I went for over a year or a year and a half.
44 I went approximately twice a week. There was no
regularity about it. I went to see Dr. Ketcham probably in the fall or winter of 1934, and the spring and summer of 1935; and then when I came back from my next expedition I went back again, and then finally dropped off eventually, and then I also went to a doctor named Clough. That was when I was at the seashore at a place called Stone Harbor, about 25 miles below Atlantic City, New Jersey. He was also an osteopath, trying to work on my ear. I made quite a number of visits to him. I was there for about a month and a half or probably close to two months. He charged me the same, about $2 a visit, (Tr. p. 63).

I have been to a number of doctors at the Naval Hospital. I went to Dr. Trible and Dr. Scala, who were not attached to the Naval Hospital. I am wondering what Dr. Trible and Dr. Scala are going to charge me. They have not finished the work with me. I have no idea how much money I have spent for eyeglasses. I have bought a number of pairs of glasses. My eyes were changing so fast. I have had different glasses as my eyes changed. I paid somewhere between $10 and $14 a pair for my glasses. I have distance glasses; I have glasses that I use on the street; I have glasses that I drive with, and glasses that I read with; and in the afternoon my eyes get tired and I have special glasses that I use. I usually carry three or four pairs of glasses. I could find out by looking up the stubs in my checkbooks how many pairs of glasses I have purchased and what prices I have paid for them. I do not have

any bills. I do have the checks. I will look up the
45 checks or stubs. I usually pay by check. The osteopaths do not give any bills. You pay cash, (Tr. p. 65). At the osteopaths, you pay there at the time you get the treatment. I did not pay by check. You pay cash every time you go to his office. They don't run it like other doctors. (Tr. p. 65, 66)

As to whether any wires were replaced in my office by the telephone company, at or about the time of the accident, I imagine they put them back because they took them out. I did not see them put the wires back. I did not stay. I do have telephone wires in my office at the present time. They are under the floor and you can not see them. There are none running up that you can see. All you can see is the end of it in the top, and that is different from the other wires. (Tr. p. 66.)

Thereupon, on cross-examination, the witness further testified, I went to the Naval Observatory in June, 1930. It was within a year, I think, that I had this arm put on my telephone. I can not make it more definite than that because I had so much difficulty trying to hold the telephone in this hand, or this hand, and write at the same time that I had that arm put on so as to have both hands free. The reason I had that put on was so that I could shift the papers and write at the same time. I should say it was certainly in 1931 that I had it put on. But if you want the exact date I will try and check up with the man who made the fitting. (Tr. p. 67) It was made for me by the electrician at the Observatory and from that time on I have always used it that way, except when I have to take it off. Prior to
46 June 6, 1934, my vision was 20/20. Prior to June 6, 1934, I had had no trouble with my vision that I know of. I had no trouble, nothing like that—I mean no disturbance of vision, so I could not see clearly. Prior to June 6, 1934, so far as I know, my eyesight was perfect and I had no trouble seeing. (Tr. pp. 68, 69.) I had normal hearing, prior to 1934.

Prior to June 6, 1934, I never had any defect in hearing on that side (indicating right side). On my direct examination I said that prior to June 6, 1934, my hearing was normal. As to what I mean by "normal", and what I mean by "perfect hearing", well, I should say "perfect" would be very sharp hearing. Prior to the accident my hearing was normal. I would say it was not perfect; it was normal. It was normal and I had no trouble hearing, (Tr. p. 69.) That was true all of the time prior to June 6, 1934.

On June 6, 1934, I undertook to call this telephone number to talk to Mrs. Alderman's home, and she lived on 24th Street, I do not remember the number, but it was north of S Street and south of California Street. She lived on the left-hand side going toward California Street. It was on the west side. (Tr. p. 70, 71)

I do not remember the telephone number I called. At the Naval Observatory we had what we call a private branch exchange. That is, we had a switchboard down on the main floor and had an operator there employed in the Naval Observatory, and that operator was a man whose name was Cook. I do not know his full name. I just knew
him as Mr. Cook. I never troubled to look up his
47 personal name. (Tr. p. 71, 72)

I told you this afternoon that Dr. Robertson and Mr. Dickey, the chief clerk, came into my office and I was having a conference with them, and then it began to rain and my messenger, the colored boy, went over and closed the window on the west side; that would be to my left as I was sitting at the desk, but the rain was coming in on the west side. Then I called on the telephone and got this number; and when I called I stopped the conversation I was having with these gentlemen who were in conference with me; I wanted to call the Alderman home so as to get in touch with my wife. When I called I first got the man at the switchboard downstairs. When I released that spring on my telephone the operator connected me with the city central. (Tr. p. 72) He got the Decatur central. That was my central. The telephone number at the Naval Observatory at that time was Decatur 2723, and still is; and then the operator in the Observatory connected me with the telephone operator operating the Decatur exchange. I told that operator the number I wanted to get. I gave her the number. I do not recall that the number I wanted to get was North 1350; it is too long. When I told the operator the number I wanted, after some appreciable delay, I finally got the number. Mrs. Alderman answered the telephone, I recognized her voice, (Tr. p. 73) She did not have time

to say anything. I imagine she screamed. I can not recall, after this long time, whether I heard her say anything. The whole thing was so sudden and so abrupt that from the time I put the call through and I heard her take down the
48 receiver and make some remark, then this thing blew
everything out. She probably said, "Hello." That is as near as I can recall now because different people have different ways of answering. She probably said, "Hello." Then, after that, my next impression was when I was thrown back in the chair, and grabbed my head. The next sensation or feeling I had after I heard her say "Hello", was a pain in that right ear. I was sitting in a straight-backed chair, (Tr. p. 74.) When I was using the telephone I leaned forward and I did that on this occasion. When I got this pain in my ear, after the thing was over, I was back in the chair holding my head this way (illustrating). I did not get up from my chair. I just stayed there. The next thing I did after that was to hold on to my head. This happened about 4 o'clock, possibly a little bit before 4 o'clock. After holding my head, the next thing that I remember was the remarks of Dr. Robertson and Mr. Dickey. I do not recall what happened next except I know I was sitting there holding my head because it was hurting so badly. It was some time afterwards that I called the telephone company. (Tr. p. 75.) As to how long afterward, well, we discussed what had happened and then I called the telephone company and notified them what had happened. You see, it was probably ten or fifteen minutes after this thing happened that I called the telephone company. I do not recall with whom I talked at the telephone office. I merely reported it to the telephone office. I asked for the manager, but I do not know whom I got. I got a man in the manager's office. I do not know who put the receiver back on the hook after I got this shock. I do not re-
49 member. Probably momentarily I must have been
unconscious, but I do not remember. I imagine from the time that blow was struck until I was leaning back hard against the chair, holding my head, I must have been unconscious a fraction of a second or a couple of seconds. (Tr. pp. 76, 77.)

When this blow, or whatever it was, had struck me in the chair, as to what happened to the telephone receiver, it was hooked on that arm. I never touched it. I did not have the telephone in my hand at all. I do not remember what happened to this hook there, or the special spring there on the hook. I can not remember what happened. I was not paying any attention to that. After the thing was all over I probably put the hook back, myself, from just second nature. I had a spring on there. When that spring was taken off, as soon as it was off, the telephone remained connected. I probably put that hook back, myself, later on. I do not remember. When I went to call the telephone company after this thing happened, I do not remember the condition of the telephone, whether the hook was in place, or not. Not after four years, I can not remember. (Tr. pp. 77, 78.)

The chances are the hook was on, and I took it off to call the telephone company, but I can not remember. I do that so many times it is just second nature. I do it hundreds of times a day. I called the telephone company and I just told him there had been an accident there. I did not know what it was. I don't recall now what I told him, except that I did report that there had been an accident and that this spark had come out of the telephone. When I told him that I was merely repeating what the others had told me. As to whether I was angry at the time I talked with this gentleman connected with the telephone company, I can not answer that question. I am not in the habit of getting angry. I was not angry at that time. I do not think I was. I was pretty badly frightened. At the time I called the telephone company I do not recall that I told the gentleman to whom I talked that I wanted the telephone company to send someone out to test this line immediately, and that if my hearing was injured the telephone company would pay, and pay plenty. I do not think I ever made a statement like that. (Tr. pp. 78, 79.)

I can not deny or affirm that I made that statement. I do not remember making that statement. I doubt very much if I did make a statement like that. It would have been very foolish for me to have made a statement like that. After this thing happened, I imagine I stayed in my office twenty minutes or a half an hour—I do not know. After this thing happened, these two gentlemen from the telephone company came in and after they were there I left and went home. (Tr. pp. 79, 80.)

I can not answer how long it was before anybody came from the telephone company, that afternoon—I do not know. It would have to be very soon. It could not be very long, because—it would certainly have to be within fifteen or twenty minutes. At the time this thing happened I had no idea that anything was going to be serious at all, and I did not make any mental notes of the exact time things occurred. I am giving you the approximate value as well as I can recall them. After this thing occurred and before I left to go home, I did call Mrs. Alderman and talked with her. I called Mrs. Alderman and told her I could not go to get Mrs. Hellweg, that I was going home. (Tr. p. 80.) 51

On my direct examination I did not mean that I never bothered anything about my wife and I went home. I told them I could not go to get her. The fact is that before I left my office this same afternoon I called Mrs. Alderman and talked with her. It must have been within half an hour after this occurred that I talked with her. I can not say that I called her before I called the telephone company, but both calls were made approximately the same time, and pretty close after that. One call was made after the other, and I can not tell which call I made first. I should say that I remained in my office that afternoon about half an hour, it may have been longer. It may have been forty minutes, I don't remember. I do not remember making any other statement to the telephone company that afternoon before I left. These two gentlemen came out there and went over this thing. Whether I am mistaken about these two gentlemen coming out there that afternoon, well, I do not know. I am in perfect good faith when I say they came out that afternoon. (Tr. p. 81.)

I am not positive they came out that afternoon. My impression is that they came out that afternoon. I could not answer that I am certain they came out that afternoon. The telephone records will show when they came out. I do not know whether I wrote a letter to the telephone company that afternoon before I left my office, or whether I wrote it that night.

52 Thereupon there was exhibited to the witness photostatic copy of letter dated June 6, 1934, addressed to the Manager of the Chesapeake & Potomac Tele-

phone Company, purporting to be signed by J. F Hellweg, which said photostatic copy of letter was marked "Defendant's Exhibit No. 1 for identification", and he was asked to examine letter and state whether he recognized his signature. And he answered: Yes, that letter is correct. I recognize my signature. (Tr. p. 82, 83.)

I can not answer whether I dictated that letter to my stenographer. I can not tell from this photostatic copy whether it was dictated or not. Frankly, I can not answer whether I did dictate that letter and affix my signature to it before I left my office that day. I have always been in the habit of writing letters on the typewriter at my home. I think the letter was probably dictated. I carry a few sheets of the stationery of the Naval Observatory at my home, in case I have to write any, and lots of times they have to be mailed out at night.

Letter shown to witness was probably dictated that afternoon. It may have been dictated, signed and mailed that afternoon. Said letter was read to the witness in the presence of the jury and is, in words and figures, as follows:

"Navy Department
U. S. Naval Observatory
Washington, D. C.

6 June 1934

53 My dear Sir:

I have just telephoned your Manager's office of the Decatur Section, at 4:10 p. m., and described an occurrence which has just happened, about five minutes ago, and which I think requires an immediate investigation.

While sitting in my office at the Naval Observatory with the Chief Clerk, Mr. Dickey, and the Director of the Nautical Almanac Office, Doctor Robertson, I had occasion to use the telephone. While waiting for the call, with the receiver close to my ear, suddenly there was an intense pain on the entire right side of my head. Practically simultaneously, there was a loud report of thunder outside. Immediately following this report, both Doctor Robertson and Mr. Dickey stated that they saw a spark jump from the receiver to my head. The result is a rather bad headache, and I thank the Lord it is no worse than that. But at the same time, if your system were properly grounded, I do not think that an arc would have passed through me but would have gone through your ground, particularly as I have on rubber soled shoes so that my entire resistance was greater than a clear road to the ground.

I will appreciate it very much if you will have your trouble man investigate the entire installation at the Observatory. The next time this happens you may have more serious results, and if an accident like that is the result of inefficient equipment, the telephone company certainly will be liable for very serious suit.

Very sincerely yours,

54 /s/ J. F. HELLWEG
Captain, U. S. Navy,
Superintendent.

Manager,
Chesapeake & Potomac Telephone Co.,
Washington, D. C."

Thereupon the attention of the witness was directed to that portion of the letter reading:

"I have just telephoned your manager's office of the Decatur Section, at 4:10 p. m., and described an occurrence which has just happened, about five minutes ago, and which I think requires an immediate investigation."

The witness testified that he undertook to state the facts at the time he wrote this letter. Having his recollection refreshed by the letter, witness testified that he called the telephone company at 4:10 o'clock p. m. and told them about something which had happened about five minutes before. Probably the telephone company was called while I was writing that letter. It must have been about 4:10 that I called the telephone company. (Tr. p. 85.)

It is perfectly true that I would not have put down there "4:10", unless it was 4:10. Five minutes is a relative time. Time is not a trivial thing, but it did not appear to me to be of such importance as to warrant my checking it to the second. On my direct examination I testified that I was knocked back into my chair and that the whole side of my head was red. That developed after this. I did not testify that it happened right there. As to whether I testified that

immediately after this accident happened there was this
redness all on the side of my head, and it was just
55 like a blister, I didn't say it at all then. I had my
mirror in my office, I know my head was sore. It was
not until sometime after that that I discovered that my head was red. (Tr. pp. 86, 87.)

I probably discovered that my head was red when these people in the office called my attention to it. I do not remember that it was red at the time I wrote the telephone company. That is a detail I could not now recall. It was that afternoon that I discovered that the side of my head was red. There were no protuberances; it was small nodules here (indicating about the temple). It was not like something protruding out, I just felt them. I could not say that there was any roughness of the skin. It was just a hard place on the side of my head. (Tr. p. 87.)

It was not on the bony structure. I can not tell you what it was. It is a fact that within five minutes of the time this thing happened I called the telephone company and reported it to them, because I thought they ought to know it. Probably subsequent to that, I then called up Mrs. Alderman and checked with her. I used this same telephone which I say I got the injury from. (Tr. p. 88.)

Witness' attention was called to that portion of the letter reading:

"While waiting for the call, with the receiver close to my ear, suddenly there was an intense pain on the entire right side of my head. Practically simultaneously, there was a loud report of thunder outside."

And witness testified, I got the pain first. In the
56 letter I say it was practically simultaneous. I felt
the pain and I was thrown back and you could hear
the crash outside. I did not see any lightning. I saw nothing. I had my back to the double windows. At that time I lived at No. 3901 Connecticut Avenue which is just below Tilden Street. I do not remember how I got home that afternoon. (Tr. p. 89.)

As to whether I drove my car home, I don't remember how I got home. I have not the slightest idea. I don't mean to tell you that I was in such a mental condition that I can not remember. I mean that I can not remember after this long time. Sometimes, I go home with other people, and sometimes I go home by myself. I do not remember how I got home on that day. I went home and laid down on the bed. I can not remember whether I did undress and go to bed. I laid down and I took a cold cloth and put it on my head. I never went to see any doctor that day. When I talked to the telephone office, they asked me to go to a doctor the next day, which I did. (Tr. pp. 90, 91.)

When I talked to your telephone office, with whomever I talked to, he said, Go to a doctor and have that ear examined, and so I went the next morning. I went to the doctor because that was our routine. Any Naval officer who is in trouble goes to the Naval Dispensary. I went to the Naval Dispensary the following morning about 9 o'clock and saw Dr. Brown, I think his name was. I am not positive of the doctor. He was a naval doctor, the ear and eye man at that time. (Tr. pp. 91.)

As to whether he did not tell me that my hearing
57 was not affected, he did not say anything. I don't
recall him saying anything. He may have. He examined my eyes very carefully. As to whether I got any treatment at the Naval Dispensary on the morning of June 7, as well as I can recall, Dr. Brown examined both the ears and the eyes and he examined the side of my head which was burned. Now, he should have a report of it. I do not know whether he has or not. There should have been a record of it in the Dispensary file. After I was seen by Dr. Brown at the Dispensary, I went to my office at the Observatory for awhile. I don't remember how long I stayed there. I remember two men from the telephone company coming to the Observatory. I can not swear it was the morning of June 7. I remember these two men came there and took up a plank and took out the wire. There were two men who came there. I can not recall exactly when those two men came and whether they were the same two men. (Tr. p. 92.)

I probably would recognize these two gentlemen if I saw them again, but, you see, that gentleman has been coming back and forth so many times at the Observatory I am confused about who it was. There was one gentleman there who has got a prominent nose and who has been there a number of times. I do not know whether he is a lineman.

As to whether it is not a fact that, on June 7, 1934, these two gentlemen came to see me at the Naval Observatory and that I talked with them about this accident and told them I had gone to the Naval Dispensary on the morning of June 7 and the examining physician examining my ear reported that it had been burned but there was no evidence of impaired hearing, I do not recall having made 58 any such statement to them. I will not deny it or affirm it. I can not say that I made such a statement because the doctor did not give me any report. I do not recall that the doctor at the Dispensary told me that my hearing was not affected. (Tr. p. 93.)

I think this wire was taken up from my room on the morning after the accident. I am not certain of the date. I do not know that this wire was not taken up until June 13. That is why I can not be definite. I told you, on my direct examination, that it was my impression that it was taken up the next morning. Apparently my impression is not clear, if you say it was taken up on the 13th. I do not know when it was taken up. I do not know definitely when it was taken up. All I know is the men came there and took it up. (Tr. pp. 94, 95.)

I can not answer that they disconnected a wire which had a bell fixed to it under my desk. I was not paying any attention as to what they were doing, but I know they took up a board in the floor and got a wire out. I can not answer as to how long I stayed at my office on June 7. I did not stay all day. I have not any idea because I have very frequently to go to the Navy Department. I can not answer how long I remained out there on June 7. I have not the slightest idea. As a matter of fact, my duties are so general that quite often I can attend to my duties if I am down town at the Navy Department instead of being at the Naval Observatory. It doesn't require my personal appearance at the Observatory to carry on my work. I was a line officer of the Navy in June, 1934, and I have 59 since been retired, being retired June 30, 1935. (Tr. p. 95.)

I had reached the rank of captain. I was retired because I was not selected for promotion to the grade of admiral, that is true. Then, I went out of the active service because of the fact that I was not selected for promotion. I made application for qualification for the flying service of the

Navy in 1927. I was examined on September 20, 1927, for qualification for entering the flying service, and I was disqualified on account of age, so they told me. The admiral told me. It was not on account of my hearing but on account of age. As to whether it is not a fact that I applied for service in the Flying Corps of the Navy, and that I was examined on September 20, 1927, and that it was recommended that I be disqualified because of defective hearing, I can not answer that question. I know I was disqualified, and I went to see the admiral about it, and he said I was too old a man to fly, and he said it was easier to train younger men. He did say this, that a flyer had to have very acute hearing and I didn't have acute hearing for flying. At that time that I was being examined by Dr. C. J. Robinson of the United States Navy, on September 20, 1927, I do not remember that he did tell me anything about what he found about my hearing. He may have. I do not remember. Doctors usually don't tell you when you are examined. They make their official report. The fact is I got my official letter from the Navy Department, that I could not be allowed. I do not know that it was on account of my
60 defective hearing. All I knew was that when they notified me, I could not fly. I just don't recall that I made another effort to get into the Flying Corps of the Navy in 1928. Possibly I did, because I was anxious to. (Tr. p. 97.)

I can not answer that I was examined November 6, 1928. As to whether I was examined by Dr. Mueller who was a surgeon in the Navy, on November 6, 1928, and he reported at the time that I had defective hearing, and the recommendation was made that there be a waiver of that defect so as to induct you into that service, but that you were not inducted into it, I never got in it, I don't know why. I was not again turned down because of defective hearing. Admiral Moffatt told me that I was too old to fly, that he did not want to spend a lot of time trying to teach older men to fly, that he wanted young men. As to whether I ever heard anything about a report that I had defective hearing at that time, my answer is that when they send a report on from the Navy Department they just give you a transcript. I do not think that, in 1927 or 1928, I was treated by any doctor for my ears or that I had any ear trouble. I do not remember. I have had my left eustachian tube inflated. (Tr. p. 98.)

That was inflated a few days ago. I can not answer when I first had that inflated. I do not think I had it inflated a number of time before this accident happened on June 6, 1934. I do not recall having my ear inflated—it is not a particularly pleasant thing if you have ever had it done. Prior to June 6, 1934, the left ear was inflated but I can not
tell you when. I haven't the slightest idea when it
61 was done. I do not believe I ever went to a doctor to
have my ears inflated prior to June 6, 1934. I am
not positive but I do not believe it is possible because it hurts too much and you would certainly remember it. (Tr. pp. 99, 100.)

I do not think so. I had my [redacted] ear inflated by this doctor in Massachusetts, that is, Dr. Rothwell, who examined me in 1934. I do not remember the date he examined me. It was in September when I was on leave of absence. I told him the reason I came to him was because some of the members of my family did not think I could hear as well as I ought. That is true. That is what I told him. My family were getting worried about my defect. I went to see Dr. Trible sometime after I went to see Dr. Dabney, at the request of the telephone company. I can not give you the date. (Tr. p. 100) I can not say that I was examined by Dr. Dabney on August 13, 1934. I can not give you the dates.

As to whether I was examined by Dr. Dabney for my ears and then, the next day, I was examined by Dr. Hyde, for my ears, and I was in a hurry because I wanted to get away on my vacation, I do have a hazy recollection of Dr. Hyde, but I do not remember the details; I do [redacted] remember Dr. Dabney. I was getting ready to go on leave, but I don't remember what Dr. Hyde—I don't even remember Dr. Hyde. I don't remember what he looked like. I have a hazy recollection that I did go to the doctor's office that the telephone company made a date with, but I don't recall what his name was, nor do I remember the date on which
the examination was made. I first went to Dr. Trible
62 for treatment sometime after I had been to see that
doctor in New Bedford, but I can not give you the
date. I probably came back to Washington that summer within a month after I went on leave. (Tr. p. 101.)

As to whether I recall that I came back to Washington on September 23, 1934, I could confirm the date exactly by looking up the records of that leave.

Thereupon witness was handed a letter dated September 24, 1934, and after having examined it, he testified that he recognized his signature on the letter, that his recollection is now refreshed and that he must have gotten back to Washington about that time. I can not honestly answer how soon after I got back to Washington that I went to see Dr. Trible. I do not know. Dr. Trible's records ought to show. (Tr. p. 102.)

I don't keep track of details like that. I never have. I have never watched my personal affairs like that. I can not tell you when I went to see Dr. Trible about my ears. I did not realize at that time that it was going to be so serious. It was subsequent to my return but as to how long after my return I can not answer that. It was not a year afterwards. I do not know that it was six months. I would be guessing. We can check that up by Dr. Trible's records. At this time I have no idea, I can not say when I went to see Dr. Trible. As to whether I recall that before I went away that summer I called up the telephone company and again talked to the same gentleman with whom I had talked on the afternoon of June 6, 1934, I talked to the telephone company many times. I can not specify any
particular instance. I do not remember that I called
63 the telephone company again on July 19, 1934. As
I say, I have called the telephone company so many times about my own details, I can not recall any particular instance.

As to whether I recall that Mr. G. R. Wilhelm, Transmission and Outside Plant Engineer of the telephone company, came to see me on July 26, 1934, I remember Mr. Wilhelm coming but I can not say the date he came. I remember the name very well. He had been there several times. I recall talking to Mr. Wilhelm. I do not know what the subject was, now.

As to whether I remember that on July 26, 1934, Mr. Wilhelm at the Naval Observatory, talked with me about this matter, and I told him that I felt that the lightning had come in on the circuit at North 1350, which was the home of Mrs. Alderman at 1814 24th Street, I have a hazy recollection of having offered that as a possible solution to Mr. Wilhelm. I think I may have said that to him. I mean, I have a hazy recollection of some such conversation but I can not vouch for it now. (Tr. pp. 104, 105.)

We had a discussion about it. It is my recollection that Mr. Wilhelm asked me whether the lightning seemed to be close by; that is, whether the thunder and the lightning seemed to be simultaneous, and I felt that there was a noticeable delay between the time I experienced the pain, and the time I heard the thunder. As to whether I did tell him on that occasion that the lightning stroke seemed to be somewhat to the east: that is, the lightning came in the east window, my answer is, well, that would be a glare
from the lightning. As to whether I did say that to
64 Mr. Wilhelm, I was just repeating what those men
had told me, because I didn't say it. I do not know whether I did or did not make that statement to him. I can not answer that. (Tr. p. 105)

I did not say to Mr. Wilhelm on that occasion that I believed the lightning had struck on this line at North 1350, and that I was positive of that. I did not say I was positive. I have always believed the lightning hit in the neighborhood of the British Embassy. I have that theory. The British Embassy was between the Naval Observatory and Mrs. Alderman's phone. I mean that was the direction. I have always believed that. Whether it is, or not, I don't know. That has been my theory.

I told Mr. Wilhelm on that occasion that fifteen or twenty years ago while I was on sea duty my left ear was injured during the coaling of a ship. That is correct. I did have such an injury in 1905. That was on the Pennsylvania, at Guantanamo Bay. We were coaling a ship and the hoist whip carried away. (Tr. p. 106, 107.) The hoist whip carried away. They were hoisting up a number of bags of coal, and the hoist whip carried away and when these bags fell the guy whipped down and it hit me on the head on the left side. That is what we called the guy wire. They used it to swing the boom. It is the wire that is used to swing the boom. It was wire that struck me, not the boom. The boom is away up in the air, 75 feet up in the air. It was the guy wire. It hit me on the head, on the left-hand side. The result of that was that it thickened

the drum in the ear, my left ear; that is what the
65 doctors have always told me. I was not laid up quite
awhile on account of that. I performed my duty for quite a long time and finally it was not getting better, and I had leave for two months, so I would not have the worry of the ship. I did not take my two months. I was back on duty in less than that time. (Tr. p. 107.)

My ear was injured at that time. I do not think my hearing was particular impaired at that time. It is a fact that the hearing in my left ear has been impaired to a certain extent ever since. The reason I told you that before this accident, on June 6, 1934, I had normal hearing in both ears was that if I can pass the examinations I have normal hearing. The doctors report it is normal in the capacity of my duties, and I had passed examinations, right along. The doctors may give an explanation of it. I did not say that I had normal hearing, that is what the doctors said. (Tr. p. 108.) Of course, my hearing is as good as anyone else's, and it was all right then. I did not tell you that I had defective hearing because of this injury on board ship. I say the drum was a little thickened. That did not impair the hearing. It was not noticeable. I never had the doctors say that. I was using the telephone that way because it was secured to the desk. I didn't have to shift it. I was not using the telephone with my right ear because I could not hear in my left ear. The telephone was secured on the right side of the desk. I was not using it that way because I could not hear in my left ear. I used it in the right ear because—I used it that way because I could not use my
right hand in writing. Before I had this arm put
66 on the telephone, I had used it with the right and
left ear, both ears, indiscriminately, it did not make any difference. (Tr. p. 109.)

As to whether on the occasion when Mr. Wilhelm came to see me on July 26, 1934, I did tell him that under no conditions did I want the naval medical examining authorities to know that I was in any suspicious of my hearing, nor did I want to have them take any further action toward examining me then or later, but I did feel that I would like to know what the real condition of my hearing was at that time, I do not recall making any statement like that. It would be an indiscreet statement to make inasmuch as I had been to the Navy Department to be examined. I do not recall that I made that statement to him. I do not recall that I asked him to have the telephone company arrange to have some other doctor examine me and the telephone company to pay for it. I do not know that as a result of my conversation with Mr. Wilhelm that the telephone company arranged for me to be examined by Dr. Dabney. I do not know that that is a fact.

As to whether I denied that I had this conversation with Mr. Wilhelm, which has just been read to me, I have had many conversations with Mr. Wilhelm, but I do not remember this conversation, (Tr. pp. 110, 111.)

I can not answer positively how close my ear was to the receiver at the time I had this pain in my ear. I usually have the telephone about like that (illustrating), when I was talking, but then I was waiting for a telephone call. As to whether it is correct that the receiver was about three or four inches from my ear, I could not answer that.
67 That is what other people told me. Of course, I have no way of estimating it. Mr. Dickey and Dr. Robertson told me about how far my ear was from the telephone. It is a matter of being hit the distance I stayed from the telephone.

At this point witness held the receiver of the reproduction of the telephone to his ear. I can not say that I held it as close as I am holding it now. I can not say how close. This chair and this telephone is not like my desk. Whatever is stated was about the position as told me by Dr. Robertson and Mr. Dickey. I, myself, could not tell how close I was to it. From the position in which I was I could tell only approximately how close I was to the receiver. I should say it was somewhere maybe two and one-half to four and one-half inches. (Tr. pp. 111.)

I do not know how far it would be exactly. There is a difference of opinion as to how far my ear was. One man said one thing, and one man said another. One or the other of these gentlemen did tell me how far they thought it was from the receiver, but I don't remember.

I do not recall that Mr. John M. Bradley, an attorney in the Legal Department of the telephone company, came to see me at the Observatory on June 10, 1935, because there were so many people who came to my office to see me on

so many different subjects, that I do not recall this gentleman coming there. I do not recall that I told Mr. Bradley that I had been regularly having my eustachian tube inflated by some outside doctors, because if I made a statement like that it would not have been correct. I did
68 not have my eustachian tube regularly inflated.

As to whether I had it inflated before Mr. Bradley saw me on June 10, 1935, I had that osteopath who was working on my ear, but there was no regular inflation of the eustachian tube. I first began going to the osteopath in 1934 and 1935, during the period preceding his purported visit. (Tr. p. 112.) I first went to the osteopath, Dr. Ketcham. I do not know his full name. I can not answer when I first went to him. It was sometime in the fall of 1934, I imagine. It was after I went on my vacation that summer. It was probably in the fall of 1934 or the spring of 1935, or the winter of 1934-1935. I did not go to see him before I went to see Dr. Trible. I think I went to both about the same time. You see, osteopaths and the M. D.'s do not gee; and I did not let the M. D. know I was going to the osteopath. They don't get along very well. I did not let the osteopath know I was going to the M. D. I did not think it was necessary. I know I can find out from Dr. Trible's books when I first went to see him, (Tr. p. 113.)

Dr. Ketcham, the osteopath, gave me deep massage on that side, hoping to stimulate the condition of the ear and improve it, but it did not work—deep massage on the right side of the head, around the mastoid bone and down inside, working from here (indicating) and down in the mouth, and I could not tell any improvement because it did not have much effect. I was not treated for catarrhal condition of the head. I have never been treated for catarrhal condition. As to whether I had a catarrhal
69 condition of the left ear when I was examined by
Dr. Rothwell in New Bedford, on September 8, 1934, I had a cold, but I don't know whether it was that, or was not, because the doctor never treated me for a catarrhal condition. He did not tell me at that time that I had a catarrhal condition. I was surprised when I heard that, the other day. I said, I have these headaches coming on me at a regular time every day. It will come on in about forty-five to fifty minutes, (Tr. p. 115.)

It is now seven minutes after 3. It comes on between half past 3 and half past 4. I can not answer when the headache first began to come on me. It is rather confused. It seems now, looking back, that I have been having that for a long time. I mean after the accident. I do not mean that it was a long time after the accident before they began to come on. That accident occurred four years ago, not a long time; from the present time back, three or four years. I can not give you any idea when it was that they first began to come on me. It was longer than a year ago. It was over two years ago. It was somewhere probably between three and six months after June 6, 1934, that they began to come on me. I can not definitely state. (Tr. pp. 115, 116.)

I did not go to a doctor for treatment when they first began to come on me. Dr. Brown told me not to kid myself any more. Dr. Brown saw me many times. Dr. Brown finally told me to stop going to see a doctor. He said it repeatedly, and he finally told me to stop treatment, that it would not do any good. I went to the Naval Dispensary on June 7, 1934, and I went back many times to see
70 Dr. Brown for the same thing, trouble with my ear,
pains in my head and eyes, (Tr. p. 116.) I saw Dr. Brown and after he left—I don't have his name—Dr. Hooker. I can not answer when Dr. Brown left. I do not know his full name, but he is in the medical corps. He is in the Naval Dispensary now. He is detached. He is out on the West Coast with the Fleet, I think. Between June 6, 1934, and the time I went on my vacation, about August 14, 1934, I may have gone down to the Naval Dispensary a half a dozen times for this ear and eye trouble, hoping that I might be able to get some relief. Dr. Schuyler tested my eyes for my glasses, because my glasses were giving me trouble. I usually carry three or four pairs of glasses with me. I have three or four pairs of glasses. I do not know how many I have with me now. There is one pair that I use in the late afternoon when my eyes get tired. There is a pair I use on the outside. This is the pair I use in the middle of the day when the light is bright. And this is a pair I use for reading in the morning when my eyes are fresh. That (indicating) is the usual group I carry with me (witness exhibits different pairs of glasses). (Tr. pp. 117, 118.)

Those headaches began, as I recall, not very long after that accident; and subsequent to that I began having these giddy spells, when I would lose my balance. The headaches began, I should say, a couple or three months after the accident. They usually happen in the afternoon a little bit later than this, between 3:30 and 4:30, it seems.
Sometimes they are not as painful as others. Some-
71 times I don't mind it very much; and sometimes I
have to fight them quite a bit. They come on with
regularity ever since; they fluctuate. (Tr. pp. 118, 119.)

I told you I had a confusion of sounds in my right ear. Sometimes I have a confusion of sounds. I can not answer when that first appeared. I can not give you any idea when it first appeared. I can not say it was a year after the accident. I do not know, but I know that this confusion of sounds has gradually developed. It is very hard to say when it began to develop. I do not know, but it has been for some time now. It may be for two years, or it may be for three years, I do not know. I can not tell you definitely when it began. I began to notice that when I was in a room where many people were talking, I could not find out what one person was saying to me, due to the noise of other people. (Tr. p. 121.)

It was not a question of a room. I have been to many places where it occurred. I have it all the time when I am in a room. I first noticed it probably in some receptions I had to attend, within the last two or three years. The experience which I spoke of as having occurred some four days ago was when I was inspecting plans for a destroyer. I was in my office. The sound that I heard then was a funny rapping noise, like it was a very rapid vibration, as if it was a tapping or a hammer but muffled, not very loud, but this muffled effect. I described it yesterday as somewhat similar to the sound of a pneumatic hammer in the distance, because it was very rapid. That is what I
meant by that. (Tr. p. 122.) That happened in my
72 office. No one was actually hammering in the build-
ing. We do not allow any hammering in the building. It disturbs the computers. There was no hammering in the building. I can not tell you when it was I experienced that sound or heard that sound. It was the day that the officers brought in this big roll of blueprints, maybe

three or four days ago, I do not remember. It was quite recently. We are going over the plans of our new destroyers now. It is usually the case that I can hear low notes much better than I can hear high notes. I can hear heavy notes better than I can hear light notes. When I attended moving pictures, I could hear the voices of men better than the voices of women. I could not hear a watch tick with my right ear. (Tr. p. 123.)

When I had these physical examinations in the Navy, the watch tick was one of the tests they gave me, also the whisper test. On those occasions, I could not hear the watch tick, not in the right ear. I could hear a watch tick back in 1931 or 1932. I could hear normally just what a normal person would expect to hear. I do not think I had any impairment of hearing in so far as hearing a watch was concerned before 1934. I know that I did not. I had normal hearing in the right ear before that time, and when I say I am positive, that is my opinion. (Tr. p. 124.)

I never had any trouble hearing with my right ear, and when I had these tests in the Navy, I passed normal tests, up to 1934. I do not know when I began to wear glasses, after this accident on June 6, 1934; it was probably
73 within three or four or maybe five months. I do not know whether it was five or six months. I do not remember. Those are details that I never checked on.

The red spots on the side of my head about the temple and the funny looking lumps, like nodules, as to which I testified yesterday, they were inside. You could not see them. You could feel those in here, right at this point (indicating). I can not answer whether it was in the flesh. It was just when you would rub your hands where you could feel. It was not smooth. I do not know what was there that someone else could see. (Tr. p. 125.)

I did not play tennis in the summer of 1934. I do not think I specified any particular time in the summer of 1934 when I played tennis and noticed the condition of my eyes because I could not see the ball clear. (Tr. p. 127.) I do not recall whether it was in the summer. It was probably early fall because that summer I went away and I do not recall playing tennis in the summer, but I do recall playing tennis in the fall, trying to, and I stopped. I mean after I came back in September. I went to the club one afternoon and I could not make a go of it. I said, I did not play golf because there is an aviator up there who had a crack-up. Whenever I have to make any sudden movement, I lost my equilibrium. I will not play golf because I know I will do this. I have not attempted to play golf because I can not. (Tr. p. 128.)

I know what happened when I went to the window one night and threw my head back suddenly. That was about
two years ago. I have not played golf since June 6,
74 1934. I probably played once, I think that is all.
Before that, I played, off and on, but not very often.
I can not answer when I first noticed the ringing in my ear. I can not give you the remotest idea. I know I have been subject to the ringing for some time. It was longer than a year ago. How much longer, I can not answer. (Tr. p. 129.)

I can not tell you when this ringing in the ear began. On June 6, 1934, there was a carpet on the floor in my office. The carpet always has been there. I assume it was there that day, but I do not know whether it was there that day or not. I have had a carpet on the floor ever since I have been there. (Tr. p. 130.)

The flooring was wooden floor. I can not tell the date when I went up to the attic and noticed that they had put in new wiring up there,—six months ago, or it may have been a year. I frequently go up there to inspect. I told you yesterday that the men from the Telephone Company came to take the wiring out, that is, the wiring from the desk up into the attic. I did not remain there the whole time that they were taking that out. I had to go to the Department. I saw them take up the floor and get the wire out. That is all I know. I have the same telephone instrument there now that I had on June 6, 1934, so far as I know. I do not think it has been removed, and it is the same instrument. (Tr. p. 131.)

Attention of witness called to photograph, (Plaintiff's Exhibit No. 3), and he testified it shows the floorings under his desk. When witness was sitting at his desk, the bell
box which is shown in the photograph, (Plaintiff's
75 Exhibit No. 3), which is similar to the bell box
which was exhibited to witness, was under his desk
and to his right. In the floor about the center of the desk,

witness notices a little cap which is higher than the floor surface. It is the connection for the wire from here to here (indicating). We have a buzzer system in the office but I do not think it goes that far. I do not know that this cap shown in the floor is the buzzer system. I have never checked that. As to whether the telephone wire goes through the floor, all I know is that one board is capable of being lifted. That board is on the right-hand side of my desk, and if that is the place where the bell box is, the strip of wood is taken up and the wires are laid under that. (Tr. p. 132.)

There have been several times when I was treated by the osteopath, Dr. Clough, each summer when I would go to the seashore, if I had a chance to go to the seashore, Dr. Clough is there. He is a doctor from Philadelphia. I was at Stone Harbor, New Jersey, in the summer of 1935, and was treated by him during that summer. He gave me a little different treatment from that which had been given to me by Dr. Ketcham. They all have a different technique. It was a massage treatment.

Thereupon, on redirect examination, the witness further testified as follows: I do not recall having had any conversation with Mr. Wilhelm, in which I told him about the condition of my ear. I do not recall ever having told Mr. Wilhelm what was the condition of my ear as I understood it to be. I do not think it is possible for me to tell

76 how much time elapsed between the time I felt this pain in my ear and the time I heard the clap of thunder. When I felt the pain I was thrown back in the chair and grabbed my head and when I was in that position that thunder was then sounding. It was a very brief time, very short, it was seconds. (Tr. p. 136.)

I did see the red condition about my face; I mean, I saw it but not immediately after that. I saw it after Dr. Brown told me my head was burned. I can not answer when I saw it. (Tr. p. 138.)

I had photographs taken of the condition of the telephone wiring and the entire condition of the attic after this accident occurred. They were taken at my request. Other pictures were taken at the request of the telephone company. They had a number of pictures taken. (Tr. p. 139.)

Thereupon certain photographs were exhibited to witness and he testified that he identifies them and that they were taken at the request of his counsel. (Tr. p. 140.)

Thereupon the said photographs, being nine in number, were offered and received in evidence and marked Plaintiff's Exhibits 4 to 12, inclusive, respectively.

Plaintiff's Exhibits 4 to 12, inclusive, are omitted from this bill of exceptions, pursuant to stipulation of counsel. (Tr. p. 144.)

Resuming, the witness testified these photographs represent that wiring in the attic and the views of the attic of the Naval Observatory. These photographs were taken within a couple of months, I imagine. I do not remember. 77

In so far as wiring is represented by these photographs showing the wiring in the attic, as to whether they reasonably represent the condition of the wires as they were in 1934 and the places in which they ran, that is the usual position for the wiring. They have always appeared that way.

As to the condition of my memory since the accident, I find that quite often I do not remember details I miss things, and then sometimes I remember it and sometimes I do not. I may forget it for a second, and maybe a week from now I won't remember it. I can not depend on it. I can not answer whether that condition became progressive or has remained the same. I know I have difficulty in remembering things. I do for some things. I do not recall that I had any such difficulty before the accident. (Tr. p. 145.)

Thereupon, further to maintain the issues on his part joined, the plaintiff called as witness **Dr. James Robertson,** who having been duly sworn, testified as follows: My name is James Robertson. I live at No. 2558 36th Street, N. W., and I am Director of the Nautical Almanac Office. It is a division of the Naval Observatory, where I had my office (Tr. p. 146.)

I have been at the United States Naval Observatory since 1893. I took a permanent position then. I am 71 years old. I am a Doctor of Science, which is an honorary degree from Georgetown University, given me a couple or three years ago. My particular class of work at the Naval Observatory is to get out two publications, the American

Ephemerist, a nautical almanac for astronomers and research men, the Nautical Almanac for navigators
78 and merchant marine men, and also research work
connected with the motion of the sun, moon, planets and stars, upon which the Almanac and the American Ephemerist is based. My work is entirely of a scientific nature. I compute the solar eclipses throughout the world for the benefit of astronomers and mariners. By international agreement, I compute the eclipses for the leading nations—England, France, Germany, Spain, Italy and Japan. (Tr. p. 147.)

The nature of my work requires me to consult, from time to time, with Captain Hellweg. I am directly under him. My duty is a part of the Naval Observatory. I had occasion to be in his office on June 6, 1934. Something unusual did occur in Captain Hellweg's office on that particular day. Along in the afternoon, I should say about 4 o'clock, I was in his office and consulting with him. Mr. Dickey, the Chief Clerk of the Naval Observatory, was also there. We three were in conference at that time. I was seated to the east of the Captain's desk. Mr. Dickey was sitting directly north of his desk, sitting directly opposite Captain Hellweg. (Tr. p. 148.)

I was just at the right of the desk about two-thirds of the way back from his desk. I was looking at Captain Hellweg. I do not believe I was talking with him. During our conversation Captain Hellweg used the telephone. He called a number, central, and there was a delay in getting it and, as his custom is, he continued his conversation with Mr. Dickey and myself and I think he had a pencil in his hand making notes. He has a telephone arranged so that he can wait for messages. It holds it up close to the ear. This is just like his (indicating reproduction of tele-
79 phone equipment at the side of the witness stand),
and he holds that right to his face and he holds his head within, say, three inches, from two and one-half to four inches, I should say about three inches to four, and then he writes this way (illustrating) and takes notes and talks. Then he can talk in his telephone at the same time. That did occur at the time I was there. He called up during the conversation. He had called to central, and central—he wanted them to give him a number, and they were

delayed in making the connection, and then he continued his conversation with Mr. Dickey or myself. While he was talking, a blue streak came from his earpiece. (Tr. p. 149.)

That is, the earpiece of the telephone, and struck across to his ear here (indicating). It was his right ear. I was sitting like this, and he threw his head back, there was a blue streak, I should say from three inches or more, and that went back the side of his head this way, and he jumped back and put up his hands like that (indicating). He did not say a word at the time. He held his head and he looked strange. I noticed that the ear was red. The blue streak seemed to spread out over his head. I have seen a thing like that before, I think I have. I think it was the color of arc lights. It was a blue flame—that describes it better—that went from the receiver into his ear and he jumped back that way and put his hand up here, and I think a little later he put both his hands up to his head and he said he had a very bad headache, a throbbing headache. (Tr. pp. 150, 151.)

He made this remark just a little time afterwards,
80 when he had recovered himself, when he began to
talk. It would be just a lone guess as to how many minutes elapsed after he was struck before he made these remarks—it was three or four minutes. He said, "I have a very bad headache." He said his head was throbbing, he felt it was spreading when he put his hands up there. At the time Captain Hellweg was struck by this blue flame, he was conversing with Mr. Dickey or myself. (Tr. pp. 151, 152.)

He did not speak to anyone over the telephone at that particular moment. I remember what the weather conditions were that particular afternoon. There was some lightning just before that, a few minutes, and it seemed just right afterwards there was a great clap of thunder, that is, just after he jumped back with his head this way. An appreciable time after that, there was a great clap of thunder and the flash of lightning in the direction of the British Embassy. When I say it was an appreciable period of time, I mean it is hard to guess that kind of time. It was not at the same time, but it was afterwards. I should think it was a matter of seconds. I should say from 5 to 20 seconds. It is hard to estimate a thing like that. Someone did come into the room while we were in conference. I think it was a messenger, Fraction, walked over to the windows to close the windows. (Tr. p. 152.)

I think Fraction was over at the window when it occurred, and I think the first flashes gave him warning to come in to close the windows. I had known Captain Hellweg since he was detailed there as Superintendent of the Observatory. I think that is going on eight years now.
81 I had conversed with him on many occasions prior to the accident. I had no difficulty in making myself understood by him when we were speaking. Since the date of the accident I have had difficulty in making myself understood by Captain Hellweg. He does not hear as well as he did before, because he will ask you to come closer and to speak louder, and sometimes he will ask me to go up or step up on the other side of him to talk. (Tr. p. 153.)

He will ask me to step up on his left ear, to walk around him, if I am to read anything to any extent. He will have me to read it into his left ear instead of his right ear. I get within a couple of feet to speak to him, something like that. In ordinary conversation, five or six feet, or four feet, or three feet, but if I wish to speak anything important, I go up rather close. I do not recall having to do any such thing as that before the accident. Since the day of the accident, I have been in his office when the telephone has been ringing. I have noticed that the telephone would be ringing and that his secretary or the chief clerk or somebody there, would call his attention to it, call his attention that the telephone was ringing and then he would pick up the telephone and answer the call. I do not know that that ever occurred before the accident happened. I do not recall it. It might have but I do not remember an incident of that kind. (Tr. p. 154.)

Since the day of the accident I have noticed something peculiar about Captain Hellweg's memory. (Tr. p.
82 156.) I noticed that he forgets things that he should remember. For example, I would say that I had papers that I had given to him, and he said, "I do not remember you giving them to me." And he would say that he has not got them, and that was very marked at times. Sometimes he gives me verbal orders and then he will for-

get all about them. As to whether they were frequent or infrequent, since the date of the accident, they were strung along during the last several years.

Thereupon, there was offered and received in evidence a photograph showing Captain Hellweg, Dr. Robertson, and Mr. Dickey, sitting about the desk in Captain Hellweg's office, which was marked "Plaintiff's Exhibit No. 13."

(Said exhibit is omitted from this bill of exceptions, pursuant to stipulation of counsel.)

Thereupon, on cross-examination, the witness further testified looking at the photograph (Plaintiff's Exhibit No. 13), I recognize the persons who are shown there. They are Captain Hellweg, Mr. Dickey, and myself. The photograph shows the position I occupied at the time, as to which I have testified. He may be a little back or a little further up, but that is the position. I was on the right side of his desk, on the east side of his desk. That would be to his right, approaching to the right. (Tr. p. 155.)

Witness examined drawing of floor plan on blackboard and testified he recognized the drawing as similar to the floor plan of Captain Hellweg's office, as it was on June 6, 1934. I think that is about right but it strikes me that this
space here (indicating) might be a little broader.
83 That may be an optical illusion. I know when I get
up I am rather close to the desk with the books on it.
The double windows are in the south wall. (Tr. p. 158.)

Captain Hellweg's back was toward the south wall and he was facing the north. I was on the east side of him and Mr. Dickey was sitting over here on the north side of the desk. On the west side of wall, there is a window, and near that south wall, on the east side there is a corresponding window; that was the situation on the day this happened. Then, there is a desk that sits over here in this corner. The messenger did not stay there at all. He stayed out in the hall. (Tr. p. 159.)

This desk was a typewriter desk that the Superintendent used at times but when the messenger sees any rain, he looks out for the windows. The side on which I indicated I was sitting would be to the right of the Captain, who was sitting over here to the south of the desk. When I looked across at him, I can not say for sure whether I was looking at an angle towards him. I would not know exactly. I was facing the double windows on the south side. I have not had occasion to study lightning or electricity. I am a theoretical astronomer. I do everything with my lead pencil, working up formulas and keeping the orbits of the planets. On the day this happened, I was sitting at the Captain's desk, and the Captain, Mr. Dickey, and I, were engaged in conversation. (Tr. p. 160.)

When the Captain undertook to telephone, he leaned over this way and called up central. The spring on
84 the telephone was there, just the same as it is now,
and he arranges that spring—I never could work it myself—I have tried it out a few times. And he could also at the same time write as he called up central. I noticed he called up central, stopped his conversation and called up central. They gave him the contact when he released that spring. He released that, and then something came up in the conversation, either between Dickey and him, or myself and him, that he wanted to call some person, and he called the number, and they still were not ready and then he had some conversation with Mr. Dickey and myself, and it was during that time that this flash came across from the earpiece to his ear, and so forth, and his head went back. He called central for a certain number. (Tr. p. 161.)

I do not know what number he was calling. I do not know that it had anything to do with the conversation we were having. Something reminded him that he wanted to make a call. It may have been something in connection with the conversation. I do not remember whether it was before or after the colored man came into the room that he undertook to make this call. The first I saw was when the colored man was next to the window, that is the window in the southwest corner of the room. I do not know whether the rain was coming in or not. I saw the flashes of lightning. I was looking right out of the window but I was thinking about the conversation. It was something pertaining to the business. I do not remember whether or not it was raining—it has been so long ago. I was looking at him when this occurred. When I first went into his room I was sitting down and there were some flashes
85 of lightning to the south, and I think there were

some flashes before I left my room below there. (Tr. p. 162, 163.)

I had been in there several minutes before he undertook to use that telephone. I do not remember. It is difficult for me to give the length of time, after so many years. When you are reading over a paper to a man or discussing a paper, time goes very fast. I can not give you my best recollection as to the time, but to answer the question how long I was in there, it must have been several minutes, before he started to use the telephone. As to whether it was five minutes, I could not say as to the number of minutes. When I go into his room to see him about something of business, I am naturally thinking about many things. I sit down with him to read a formula or something and it may be that it is for me to do something for him or him for me, and I do not notice the time. It must have been several minutes. Before I went into his room there had been lightning in the south, and while I was sitting in his room there were other flashes to the south. (Tr. pp. 163, 164.)

My room is in the south side of the building, not directly under Captain Hellweg's, but a little to the west, on the south front of the building. I think it is just one door to the west, on the floor below. I had noticed the lightning before I left my room, and after I went up to Captain Hellweg's room, I noticed it again. I noticed it in the south window. He has a large double window to the south, back of the captain. I do not remember how many flashes of lightning I noticed before he undertook to use the telephone. (Tr. p. 164.) All I can say is there were several.
There was more than one, and I can not say how
86 many. I do not remember whether it was accompanied by thunder, but it probably was. All lightning is accompanied by thunder.

I do not wish to answer any technical questions about thunder and lightning. I think light travels 186,000 miles per second. I have not even looked at that for many years. I think sound travels about 600 feet per second. Maybe they have changed it. (Tr. p. 165.)

A few seconds before he undertook to use the telephone, I saw flashes of lightning. I can not say how much time elapsed between the last flash of lightning and the time he began to use the telephone, probably several minutes. When I say "several minutes", I am estimating this time, and that has been four years ago. After this thing occurred I made up a little memorandum as to what happened. (Tr. p. 166.)

I think I made a statement the next day. There was a flash of lightning and immediately afterwards a big clap of thunder; the thunder was accompanied by lightning. It seemed to me I saw the lightning and heard the thunder about the same time, just right afterwards. The clap of thunder I heard immediately after the flash. The clap of thunder seemed to follow the flash, but it was just after he jerked his head, when I saw the flame. (Tr. p. 168.)

When I saw the flame, then he jerked his head back, and it seemed to me to be about the same time that I heard the thunder—it was just afterward. That is my recollection. It was something between five to fifteen seconds, I think.

It was from five to fifteen seconds after he went back
87 in his chair that I saw the flash of lightning and
heard the clap of thunder. I should say that his ear was from three to four inches, somewhere along there, from the telephone receiver at the time I saw this blue flame. I think I know what an arc is, when two pieces like these arc lights come together. (Tr. p. 168.)

It is a question of electricity from one terminal to another; as it passes through the air or atmosphere, it causes an arc across there, and that is when you see the blue flame. I have no idea how many volts it would take to arc a space of some three inches. I do not know how many volts of electricity there is in lightning. I do not know that it is over 100,000 volts. I had no idea whether it would take more than 100,000 volts of electricity to arc this space of three inches which I have described here. It must be very strong. It was not an optical illusion on my part. I had not been drinking anything. I have seen lightning. (Tr. p. 170.)

I do not remember having seen lightning which reflected inside, but I may have. I do not know that this is a common experience, but it may be. As a nautical man, I work our formulas and orbits of the planets and the orbits of satellites, and by means of these we figure out places in the future. I probably know lightning when I see it, but I have

never made a study of it. It is not in my line. As to whether it is not a fact that all I saw on that day was the reflection of lightning in the glass through that window, well, it seemed to come right through like you see anything else—the trees out there. I did not say the lightning
88 came through the window. I saw it. That blue
flame which I saw was not reflected in that window. That came out of that place around his head and shot through that blue flame. (Tr. p. 170.)

It seemed that the Captain jumped back and was knocked up. I stayed in the room after that until a quarter after 4. I stayed there and tried to get a chance to talk it over with him but he was so flustrated about it and was in such a condition he could not talk and I left. I do not recall that I was there when he called up the telephone company to report this. I do not remember whether I was there when he did that, or not. He probably did call up the telephone company that same afternoon and report this. I may have been there when he did that but I do not remember about it. I do not remember him calling up. I remember him saying he was there. I do not remember that he called up this telephone, North 1350, and talked to this lady on 24th Street. I do not remember any of the details like that. I was occupied in transacting my common business with him. (Tr. p. 171.)

As to whether I was paying attention to him, well, this thing had affected his head and I was not interested in his other difficulties. He may have made several calls so far as I know. He put his hand up over the right side of his head and held it, he held it awhile, and after awhile he put up both hands. He sat there with his hand over his head awhile and then he put his other hand up. I remember being there about a quarter after 4 but I think that I went down to get some papers in my room and returned after this thing happened at a quarter after 4, because I
89 wanted to transact some business with him. I
wanted to get his consent to something or give him some advice, and I went back there again from my room, but then he did not seem to be in any condition to talk, or to want to, so I let it go. (Tr. p. 172.)

I usually got to the office about a quarter of 9. Captain Hellweg sometimes quit at 1, and sometimes quit at 5 or

7, and I have seen him there at 9. If he is working on something or writing some articles or something or other, he continues until he finishes. I do not know what time he left that day. I left him in his room and went down to my room. I do not recall that I was in his office when he dictated a letter to the telephone company. I was there on June 7. I do not remember whether Captain Hellweg was there that day. I do not remember his being away. I do not remember when he went away on his vacation that year. (Tr. p. 173.)

I did not notice the colored boy come into the room that day. I noticed him over at the window. I looked over there and saw the colored boy, Fraction, I think, just after the Captain was telephoning. I think it was after Captain Hellweg was telephoning that Fraction was putting down the window. He may have been there before. I have been connected with the Almanac Office, and Captain Hellweg has been Superintendent of the Naval Observatory, since this accident happened. He is my superior officer, just as the Secretary of the Navy and the Chief of the Bureau of Navigation. Above him comes the Bureau of Naval Operations or the Secretary of the Navy. Sometimes it is directly and sometimes it is indirectly. (Tr. p. 174.)

90 The first time I noticed that he was hard of hearing, I think, was soon after this accident to his ear. I noticed it because I would speak to him and then I would have to repeat, later. He went away that summer, I think, after that, and I noticed he was hard of hearing. Assuming that he came back from his vacation about September the 23rd, I would judge it was sometime about that I noticed he was hard of hearing, after he came back from his vacation. I have been in his office from time to time since June 6, 1934, when he has been using the telephone. I have noticed him using it in his other ear, of late. He will take the telephone off and put it around to his other ear. (Tr. pp. 175, 176.)

By "of late", I mean within the last six months to a year. After this accident on June 6, 1934, I noticed that the right side of his head was red. It seemed to cover the whole side all around his ear and extending up toward his hair. I do not remember how long that continued. I would see it when I would go up to see him and call on him. I

do not remember whether I went there the next day, or not. That is four years ago. There is no particular thing that happened the next day that recalls it to my mind. This redness did not disappear after that. I think it was there for some time. (Tr. p. 176.) I do not know how long. It may have been there until after he went on his vacation, if you say he went in August. I do not remember that on June 7, it was nothing more than a little spot about the size of a quarter, right at the temporal region on the right side of his head. It was larger than that at any
91 time. It spread from his ear up over the side of his head. It was red that afternoon right after the accident happened. It was red, that is all I know. It was some discoloration of the skin; it was red. I think the skin was rough. He is a man who did not give way to his feelings about whether it pained him. (Tr. p. 177.)

I do not remember whether there was a carpet on the floor of his office on June 6, 1934. As I remember it, it was a bare floor. I do not remember if there was ever any carpet there. It was a wooden floor. The first occasion I noticed that Captain Hellweg appeared not to hear the telephone ring, I think, was along about that same time, and if you say he went away in August and got back in October, I noticed it, then, after he returned, sometime in the fall of 1934. I do not know whether at that time the desk of the Captain was mahogany or glass top. I think it was a glass top. I would go in there every day but you must remember that I am an astronomer and I think of problems and not of desks. I am not interested in anything outside of the problems. I am usually, at all times, absorbed in the problems. This was not just a reflection of light that I saw in the window that appeared to come from this telephone. (Tr. p. 178, 179.)

That came from the earpiece and across to the head. Referring to the photograph (Plaintiff's Exhibit No. 13), Captain Hellweg had his back toward these big windows here on the south side of this wall. I was sitting on the side of the desk looking over right directly to him. He may not then have been in my direct line of vision toward that window, but I think he was in the line of one of the
92 two. The thing which I saw was not the reflection that came through this window which seemed to

come from that telephone. It jumped across to his ear about three inches, about that. (Tr. p. 179.)

Thereupon, on redirect examination, the witness further testified, describing the area south of the Observatory: It is an open space as far as the Observatory Circle, and then it is wooded below that from the park extending down over the old Alverson Estate. You are able to see lightning for quite some distance in any direction. I do not remember when I took my vacation in the year 1934. I do know the difference in color between lightning and static discharges going through the arc lights. The static discharges are blue and the color of lightning, to my eye, is white. (Tr. p. 180, 181.)

Thereupon, on recross-examination, the witness testified as follows: I am not an expert on electricity. I do not mean to say that all arcs are blue. If that is an arc, the one I saw was blue. I do know what it was. I know it was a blue flame that went from the receiver into his ear. It was a blue flame that shot across from the earpiece. (Tr. p. 182.)

As to whether I saw any lightning immediately at that moment, I saw that right after that. In the meantime, there was a flash of lightning and a very heavy clap of thunder. The flash of lightning was from five to twenty seconds after I saw the blue flame. Isn't that immediately? I do not know anything about how fast electricity travels. I have not read the speed of electricity for years
and it has been developed so much since my time
93 that, practically, I know very little about it. I do
not know exactly the definition of the static discharge. I know the blue flame went across there, or a streak, or whatever it was. It was blue. Whatever I saw was blue. (Tr. pp. 182, 183.)

Thereupon, further to maintain the issues on his part joined, the plaintiff called as witness **Judd E. Dickey**, who, having been duly sworn, testified as follows: My name, my full name, is Judd E. Dickey. I live at 3601 34th Street, Northwest. I am employed at the United States Naval Observatory, as administrative assistant and chief clerk. I will have been there thirty years the first of July, this year. (Tr. p. 183.)

I know Captain Hellweg. He is Superintendent of the Naval Observatory and has been since 1930. I remember the occasion on June 6, 1934, when Dr. Robertson and I were in conference with Captain Hellweg.

Thereupon, witness examined the photograph (Plaintiff's Exhibit No. 13) and testifies that it reasonably resembles the positions in which they were seated. I was seated directly opposite Captain Hellweg, facing him. Dr. Robertson was to my left. It was in the afternoon but I do not remember just what time. Something unusual occurred while we were there in conference. (Tr. p. 184.)

There was a blue flame came from the receiver of the telephone and struck the Captain on the right side of the head. He was using the telephone at that time.

94 Witness, using the telephone instrument which was placed alongside the witness stand, testified: I was sitting like this. He was writing. The receiver was not in contact with his ear. I would say that his ear was three or four inches from the receiver. The mouthpiece of the telephone was not in contact with his mouth. I could not say the distance the mouthpiece of the telephone was from his mouth. I know it was not so much. Captain Hellweg was talking to someone over the telephone at that time. I assume he was. He was writing and he was talking to somebody. As I remember it, Captain Hellweg was making an outgoing call. (Tr. p. 185.)

I do not know whether he had made connection with the party whom he was calling. As I saw this flame, or whatever it was, it struck the side of his head. It came from the receiver of the telephone. It was blue in color—a blue flame. It seemed to go right up against the side of his head and up over it. He grabbed his head and said he was in great pain. Immediately following that I noticed his head or face was very red; the whole side of his head and face, the right side. It covered the whole side of his head and face and up to the top of his head where there is no hair. You could see it. (Tr. pp. 186, 187.)

At that time it was raining. A messenger came into the room. His name is Edwin G. Fraction. He is a colored man. He came to close the window to keep the rain out. He had closed the window in the west corner of the office and was standing by a desk there. To the best of my knowledge

and belief there were no other windows in the office
95 closed at that time. In the office there are two side
windows which are single, and the double window on the south side. The only window which was closed was on the southwest corner of the room. (Tr. p. 187.)

When this thing occurred the conference was immediately broken up. That is, I went to my office and Dr. Robertson went to his office, as I remember it. Captain Hellweg left the office immediately afterwards. I was there afterwards, but Captain Hellweg was not. Prior to this occurrence on June 6, 1934, I did not have any difficulty in making myself understood when speaking to Captain Hellweg. He did not wear glasses prior to that time. Since the time of the accident I have had difficulty in making myself understood when speaking to Captain Hellweg. It has been some time since that first indicated itself. I could not say how long. I do not remember how soon after the accident. I could not say that I do. (Tr. p. 188.)

I would say it was within six months after the accident. I have noticed something peculiar about the condition of Captain Hellweg's memory since the date of the accident. He is forgetful. By being "forgetful" I mean I can tell him certain things and see him a short time afterwards and he does not remember anything about it, or at least he tells me I have not told him those things. My other experiences with him regarding his memory are that I have had considerable disputes with him about papers which he should have and which I know positively I have given to him, and I have had occasion to insist that he had the
papers and he would insist that he did not, and after
96 he would go out of the office I would pick them up.
They would sometimes be in the desk and sometimes in his drawer on his desk and in the incoming mail basket, and they were matters of business connected with the Department. (Tr. p. 189.)

They were matters of importance. I would say that within the past two years that has been quite frequent. I did not notice it prior to that time. Prior to the accident he did not have such a lapse of memory. He was not forgetful. I came in contact with him several times a day. My office is immediately next door to his. There is a door between our offices. I have called his attention on several occasions to the ringing of the telephone. I did that because apparently he did not notice it. (Tr. p. 190.)

It was the usual ringing of the telephone bell. I had to call his attention to the fact that the telephone was ringing. As a matter of fact, you could hear it in my office. Such a thing as the Captain not noticing the ringing of the telephone did not occur prior to the accident. (Tr. p. 191.)

Thereupon, on cross-examination, the witness testified as follows: On June 6, 1934, the day about which I have been speaking, I was sitting in a position which is shown in this photograph (Plaintiff's Exhibit No. 13). I recognize the drawing on the blackboard as the floor plan of Captain Hellweg's office. (Tr. p. 195.)

In the south wall there are double windows. There is a window in the east wall and the window in the west wall.

97 Captain Hellweg was sitting at his desk with his back to the window at the south and I was facing the south windows.

Thereupon, witness marked with the letter "D", on the drawing of the floor plan, the position in which he was sitting at the desk, and marked with the letter "H" the position in which Captain Hellweg was sitting at the desk. (Tr. pp. 196, 197.)

I was sitting right directly opposite him. The window at the south side was behind him. He was in the line of my vision. I first noticed that lightning when I saw the blue flame come out of the receiver and hit him beside the head. I do not know how long I had been in the room before I saw that. It was probably ten or fifteen minutes. I am not positive that I went into the room with Dr. Robertson. I think Dr. Robertson was sent for, if I remember correctly. He was sent for before I came in there. I do not remember whether it was raining when I went in there. I did not see any flashes of the lightning at all. (Tr. p. 197.)

I did not see any flashes of lightning while I was in the room. I did not see any flash of lightning before I saw this thing which I described as a blue flame, and I never saw any flash of lightning after that. I did hear thunder. That was an appreciable time after I saw the blue flame strike Captain Hellweg. By "an appreciable time", I mean it was time enough to indicate that the lightning had

struck some distance from the Observatory, if there had been any. That is all I heard. The time which elapsed between the time I saw this flame which I have testified to and the time I heard the thunder was probably a second or so. I do not know how long it may have been,
98 anyway. (Tr. p. 198.)

Captain Hellweg, Dr. Robertson, and I. were engaged in a conference. I could not say when the colored boy came into the room. He came in there very shortly before we went out. I do not know how long he had been in there. The Superintendent rang his bell for the boy to come in and close the windows. It was raining. He has a buzzer system to call the messenger. It was during the conversation that he called the messenger. I do not know how long afterwards. He did that sometime before I saw this flame, but I could not say how long before. The boy did come in and the window was closed before I saw the flame. That west window was closed before I saw the flame. The boy was still in the room. (Tr. p. 199.)

He was in the room at the time I saw the flame. He was over there by the southwest corner where there is a desk that sits diagonally on the floor. He was near that desk and I could not remember how long he had been in there before I noticed the flame. We had been in there for some time when Captain Hellweg started to use the telephone, probably ten or fifteen minutes. I do not know what time it was when I went in there but it was sometime in the afternoon. I do not remember whether we went in there pursuant to an appointment or whether we were called in. I would say that we had been in there ten or fifteen minutes. I could not tell you whether it was around 4 o'clock. (Tr. p. 200.)

Illustrating with the telephone instrument which was beside the witness stand, witness testified: He was
99 sitting something like this at the desk writing and
that is when the flame came out, and he fell back and grabbed his head. When the telephone is not in use, I can not tell whether the telescopic arm is folded up or whether it is extended. When he began to use the telephone, he usually pulled it out or extended it. I can not remember whether he did that on this occasion. He has a hook and a spring like the one on the instrument beside the witness stand, on what is ordinarily the receiver hanger. When

he got the call, he pulled this down. I heard him call for a number. I do not remember what number. He got our board first, that is, a P. B. X. (Tr. p. 201.)

That is a branch exchange. He asked for a number. I did not hear what number he asked for. We have an operator in there who was on duty at the time, at the switchboard on the lower floor, and when the Captain pulled this spring up, that gave him a circuit contact with the switchboard, and that was answered by the operator there. The operator's name is Cook, and he is employed as a guard-watchman, as we call it. He was the operator on this switchboard. After the call was made, I presume the connection was made. (Tr. p. 202.)

He had made a call and he was talking. I do not remember what he said, the exact words. I haven't any idea as to what he was saying. That is too far back. My memory is clear but I do not remember conversations. I did hear him utter words. It would indicate to me that he had received his connection. He had completed his connection and
100 was talking with the party he had called. He had uttered a few words before I saw the flame, enough to know that he was talking to somebody. He stopped his conversation with us so as to telephone. He excused himself, that he wanted to telephone. (Tr. p. 203.)

I assume he was talking to someone. It was not to our switchboard. It was while he was talking that I noticed this flame. I should say his ear was from three to four inches from the receiver. I saw a blue flame. That is all I can tell you. And it came on the side of his head. Shortly afterwards I saw a red mark there. I saw that the same day I was there, and I saw it the next day too. I saw it that afternoon, soon after he had used the telephone, that is, a few minutes. I stayed in his room after he had used the telephone probably two or three minutes. The conference broke up right away. (Tr. p. 204.)

It may have been longer, or it might have been less. I do not know. It was not very long. I did not hear him call up the telephone company and report this matter. I did not hear him call up this number and talk to a lady that afternoon. I do not know if he dictated a letter that afternoon. He did have a secretary. Her name was Mrs. Hilton.

I do not remember whether she did go into his office to take dictation that afternoon, or not. I could not say because that is a frequent occurrence. He buzzes for her and she goes in. I did not see him leave the building that day. (Tr. p. 205.)

101 I do not know how long I stayed in his office afterwards, but it was two or three minutes. When I went out he was sitting at his desk, just sitting there holding his head, and I went out and left him and I did not have occasion to go back. I was in his office afterwards. I did not stay in afterwards. I could not say what time it was I went back into his office. It was some time that afternoon. I wanted a paper. It may have been before 4:15. I do not know what time this thing happened. I do not know what time of the afternoon it was. (Tr. p. 206.) I do not know positively what time I went back in his office. I know it was before I closed the office because I went there for some papers. I saw Captain Hellweg the next forenoon, that is, on June 7. I had occasion to go into his office that day. I do not know what time he stayed there on the 7th of June. I do not remember what time he got there that day. I know some men from the telephone company came there right shortly after the accident. I just saw the telephone men going by. I do not remember whether I talked to them, or not. I may have.

The whole side of his face on the right side was red, the face and head both. (Tr. p. 207.) All the whole side of his head and the side of his face was red. I saw that that afternoon. The next morning it was still very red. I do not know how long that continued but it was probably a week or more. You could see it; it was slightly dissipating but it was still red for some time. I do not know for how long, probably a week anyway. It was several days, I know. I can not say when it was that I first noticed that the

102 Captain was hard of hearing. It was some time ago. (Tr. p. 208.) It was probably six months after June 6, 1934. I first noticed that he appeared to be forgetful within the past two years. I can not tell you when it was that I first noticed that he appeared not to hear the telephone when it rang. It was probably a year afterwards. It may have been less time but it was within the year. My best recollection is that it was from six months to a year. The

Captain had a flat top desk with drawers on two sides. I do not remember about the top surface of the desk but I think it had a small piece of glass on it. That glass cover has been put on since this thing occurred. As I remember it, it has a glass, probably as part of the top, probably twice the size of an ordinary desk blotter. (Tr. p. 209.)

This glass on top of the desk was between the Captain and me. On the floor there is a large rug with small rugs alongside of the desk, a large rug under the desk in the center. So that the Captain's feet were on the rug and his chair was on the rug and the floor was an oak floor. (Tr. p. 210.)

Thereupon, on redirect examination, the witness further testified: The rug shown in the photograph (Plaintiff's Exhibit No. 13) is not the same rug which was on the floor on the day of the accident. The rug shown in the photograph has only been there about a year and a half, or less time than that. (Tr. p. 210.) At the time of the accident there was a small rug there, probably 8 by 10, and this other one. His chair was resting on the rug and his feet
103 were on the rug. It was fixed so that the rugs were under his feet and under his chair. (Tr. p. 211.)

Thereupon, further to maintain the issues on his part joined, plaintiff called as a witness **Edwin G. Fraction**, who, having been duly sworn, testified as follows: My full name is Edwin G. Fraction. I am employed in the United States Naval Observatory. (Tr. p. 211.) I am employed as messenger and have been so employed for about twenty years. I live at 1545 North Carolina Avenue, Northeast. I had occasion to go into Captain Hellweg's office on June 6, 1934. There was an electrical and rain storm. Whenever rain comes up and it looks like rain it is my duty to see that the windows are closed. It was around 4 o'clock in the afternoon. On that day Dr. Robertson and Mr. Dickey were in Captain Hellweg's office. (Tr. p. 212.)

That afternoon I closed all of the windows. There are four windows in that room, one in the extreme east, and one on the extreme west, and two on the extreme south. I closed the extreme east first. I closed the west window also because it makes a draft between the two windows, and I had to close both of them. I closed the west window just after I closed the east window. After I closed the windows there was a sharp thunder and lightning, of course, and a heavy clap. (Tr. p. 213.)

Something happened to Captain Hellweg at that time. When I turned around at that time—I was fastening the west window at the time, closing the windows and of course after that I had a north view to come into the room.
104 I was facing, in other words, northeast. At that time when this great clap of thunder and lightning taken a flash, a bluish flame came from the telephone receiver to Captain Hellweg, and came around the back of his head.

Thereupon, witness was shown photograph (Plaintiff's Exhibit No. 13), and testified that it fairly represents the position of the telephone and the position of Captain Hellweg, Mr. Dickey and Dr. Robertson at the time witness saw the flash or flame.

Witness resuming testified: From where I was standing, I could not clearly see Captain Hellweg's right ear. I saw the telephone receiver. (Tr. p. 214) The photograph (Plaintiff's Exhibit No. 13) fairly represents the kind of telephone and the way the receiver was at the time Captain Hellweg was using it. I saw the blue flame come this way from the telephone receiver. I could not say definitely from what part of the telephone receiver I saw it. As well as I can remember, it was over this part (indicating), from this part here, as well as I can remember. That is the part you put up against your ear. And that flame covered the back part of Captain Hellweg's head, from the right ear to the rear of the head. (Tr. p. 215.)

At that time Captain Hellweg clasped his head as if he was in pain at the time. The distance I was from him, I could not hear him say anything. There was thunder with the storm coming. I went to see what it was all about. I went to the desk and saw the Captain. I could not remember how long I stayed in that room. It was a short
105 period and then I left the room. I did not notice anything peculiar about the color of Captain Hellweg's head after this flame struck him. (Tr. p. 216.)

I first met Captain Hellweg when he became superintendent of the Observatory. (Tr. p. 217.)

Thereupon, on cross-examination, the witness further testified: Witness looked at the drawing of the floor plan on the blackboard and testified, he did not recognize that as the floor plan of the office of Captain Hellweg. Witness had pointed out to him on the drawing of the floor plan the location of the Captain's desk, the double windows in the south wall, the window in the east wall, and the window in the west wall. Resuming, witness testified: I came into the room and went over and closed the east window. (Tr. p. 217.) Then, I closed the windows in the south wall and then went over and closed the west window. I had my back to the other. I had to turn and look out. When I was looking out of the window, I can not say that I saw lightning. When the storm was coming, of course, the lightning would flash. It is my duty to go into the room whenever rain storms come up. The Captain did not have to buzz for me. I do not remember whether he did buzz for me. (Tr. p. 218.)

I stayed in a little room not far from the Captain's office. Mr. Dickey's room is right next to the Captain's room. I stayed in the last room on the left, in the hall, across from the Captain's office, on the opposite side, that is on the north side of the building. My duties are to attend to things for the captain first, and then for the others. The
106 windows in the other rooms are closed by the other messengers in other parts of the building. On this particular day, I can not remember whether he buzzed for me to come in. (Tr. p. 219.)

It was around 4 o'clock when I went in there. I heard the rumbling of thunder and the flash of lightning before I went into the office. The rain had started to come in when I went in there. I saw Mr. Dickey and Dr. Robertson there. I closed the window on the east side and walked behind the Captain and went to the west side and closed that window. I saw the lightning after I had closed the west window. (Tr. p. 220.) I closed the window and turned around and faced the Captain. At the time I was closing the window I do not remember that I saw any lightning. After I closed the west window I turned around and that is when I saw this flame come out of that telephone receiver. The Captain was between me and the receiver. (Tr. p. 221.)

I could see the telephone receiver. I could not see the right side of his head from where I was. I could see a part

of the telephone. I could not see his ear on the right side of his head. (Tr. p. 222.) I could see the telephone projecting out from the east—the receiver. I could see the arm of the telephone. I could see the receiver. I knew this was on the hook. Then, I saw the flame come around the back of his head and the Captain put both hands on his head. I went out of the room. I went out in a little time, I could not say how long. I do not know how long I stayed. I just do not know. They did not do anything else in
107 that room after that. There was nothing else to do after closing the windows. The only thing after that was the Captain's injury. (Tr. pp. 223, 224.)

I went out shortly afterwards. I did not know anything after that. I could not say how long the Captain stayed there that day. It was four years ago. I did not see him when I left. I leave when the mail goes out. I could not say what time of day it was. Four years ago is quite a long time. The major part, I can tell you, but that is a minor part. I did not notice the Captain's face at that time. I walked over to the Captain's desk. I did not hesitate at all. (Tr. p. 224.)

He was sitting down at the desk. I did not see him use the telephone after this thing happened. I did not hear him call up the telephone company. I saw the Captain the next morning as usual, I guess. I do not know that he was there all of that day. (Tr. p. 225.)

Thereupon, further to maintain the issues on his part joined, the plaintiff called as witness **Harry Ellsworth Cook,** who, having been duly sworn, testified as follows: My full name is Harry Ellsworth Cook. I am a guard at the Naval Observatory and have been there almost fifteen years. Before that, I worked at my trade as sheetmetal worker. (Tr. p. 226.) I was on the switchboard at the Naval Observatory on the afternoon of June 6, 1934. I recall that being the day that Captain Hellweg was injured. I received a telephone call from Captain Hellweg's office, around 4 o'clock that afternoon. I do not remember what
108 number Captain Hellweg was calling. I did make a memorandum of it at that time. It was my duty to make a memorandum of all outgoing telephone calls, and the numbers that were being called. I haven't the slightest

idea where those memorandums are kept—the chief clerk's office, I suppose. They are turned in to the captain of the watch, Mr. Gingress. He is the gentleman who takes charge of them. We have a switchboard downstairs. (Tr. p. 227.)

Thereupon, there was offered and received in evidence photograph, the front view of private branch exchange switchboard, which was marked "Plaintiff's Exhibit No. 14"—(said exhibit is omitted from this bill of exceptions pursuant to stipulation of counsel). Witness, resuming, testified: The switchboard is a P. B. X. This photograph (Plaintiff's Exhibit No. 14) reasonably represents the appearance of the switchboard on the day that Captain Hellweg was injured. This switchboard is operated by means of plugs that are inserted in the jacks. The holes are known as jacks. (Tr. p. 228.)

Describing the operation of the switchboard and how a connection is made, witness testified, when the call is made, I insert the plug, and if he tells me to give him the outside, I have to put another plug in the trunk line. Explaining how I use these plugs and insert them in the jacks, at the time Captain Hellweg called, I just picked up the plug and inserted it in this jack, and he gives me the number, and I pick up another plug. I know he is giving me a call because I have the signal. The signal is a light. It is located right
under the jack corresponding to his branch number.
109 I did receive a signal on that particular occasion that
Captain Hellweg wanted to use the telephone. Captain Hellweg did ask for a number. I answered the telephone and I inserted a plug in the trunk line and when central answered I gave her the information. I gave the central operator the number, and Captain Hellweg got that number. (Tr. p. 229.)

Something unusual did happen at the time Captain Hellweg was in contact with the number I had gotten for him. It was during an electrical storm. His light went up and also several others. All the lights did not go up. Several lights went up on the switchboard, including the one he was using. When a telephone line is in use the signal lamp does not remain lighted. (Tr. p. 230.)

At no time during my experience on the switchboard at the United States Naval Observatory, during any electrical storm, or during any heavy rainstorm or thunder storm, have I at any time known the signal lamp of the light in use to light up while a connection had been made with another line. To my recollection, I have not at any time while I was on that switchboard at the Naval Observatory, during any heavy rainstorm or electrical storm or thunder storm, ever seen the signal lamp on lines not in use that way. (Tr. p. 232.)

I do not remember that the entire lines were in use on that particular switchboard at that particular time. Captain Hellweg's line was the only line in use at that time. I do not remember that anyone from the telephone company came out immediately following this accident to inspect the switchboard. I do not know whether anyone came
110 the following day. I was not there the following day.

I do not use one of these headpieces when I am operating this switchboard. I just have a receiver on a cord instead of putting a bridle on. We did not use the bridle. I have a receiver on a cord. (Tr. p. 233.) That receiver was lying on the switchboard. The witness then pointed out the receiver on the photograph (Plaintiff's Exhibit No. 14). I just left the receiver up just over my ears. As near as I can remember I should say that I saw four or five lamps that were lighted up on that day. That is all I noticed at that time. They probably stayed lighted up a second or two seconds. I did hear unusual noises at that particular time. The kind of noise I heard was the noise that usually follows a sharp flash of lightning. (Tr. p. 234.)

It was a sort of crashing noise. There were other noises in that switchboard at that particular time. The kind of noises I heard in the switchboard was a sort of a racket, a tearing noise like something there was tearing, as nearly as I can describe it—like tearing a piece of cloth, something like that. (Tr. p. 235.)

Thereupon, on cross-examination, the witness further testified: This photograph (Plaintiff's Exhibit No. 14) shows the switchboard at which I work. My position at the Observatory was that of guard and I also performed the duties of switchboard operator. Looking at the face of this switchboard, I notice these little dots put on that photograph. There is a double row and then the separation, and then another double row, a third double row, and the fourth double row. (Tr. p. 235.) These double rows

111 only represent the light and the other jack. The jack is the hole where you put the plug in and under each jack or hole there is a light. The lights are all white in color except the Superintendant's, and his is red. They are all white, with the exception of the Superintendent's which is red. On that switchboard in the Naval Observatory, ther are 25 local branches, 3 trunk lines, and the Navy line, a direct line to the Navy Department. There are only 25 telephone on that switchboard in the Naval Observatory. At the time of this happening there were only 23. When a person called from any of these branches, as soon as he took this receiver off the hook, that lighted the light under the jack, under his particular branch. Each of these jacks was numbered with a branch number. The captain's number was No. 4. And that was a red light so as to distinguish it from the others. When Captain Hellweg took his hook off, that light lighted up on my board. And I put this other plug into the jack, for the long outside lines, the cable lines, and when I put my plug into this jack in No. 4, that connected me with the Captain. And this receiver which I used is shown on this photograph, lying on the face of this board. (Tr. p. 237.)

I put the receiver up to my ear and when he told me the number he wanted, I would give it to him. I asked him for his number, and he would give it to me. I inserted the plug in the outside line and when the operator answered I would throw the receiver down. He gave me the number and then I plugged in on the outside line, the cable line, and that connection gave him contact with the operator at the Decatur exchange. I gave her the number he wanted. Meanwhile, I had this receiver at my ear. As soon as I 112 got the number, I closed the plugs and put the receiver down. Then, I had made entire contact with the operator, so that he could call her without calling me. In other words, I cut myself out. I did not wait until he got the number he asked for. (Tr. p. 238.) I got the outside operator myself and gave her the number, and she got the number for him. I did not hear her call back the number. After I gave the number I did not pull out this plug. If I had, I would have pulled him out. I left the receiver down and closed the key, and that cut me out. As soon as I inserted the plug the signal light went out. As soon as you insert your plug and get connected with the operator, the light goes out. After he was connected, I noticed several lights appeared on the board. That was during that thunder storm. (Tr. p. 239.)

As to the number of lights I noticed that appeared on the board, as near as I can remember—it has been nearly four years ago—I would say four or five, including his. I do not know on which branches they were. I do not remember.

If any of those persons, any of those other officers who had a telephone like this with the receiver on the hook, would raise the receiver, the light would go on, on my board, and the buzzer would go on. I do not know whether the lighting of the lights was caused by that. I have no means of knowing what caused it. As to whether it was just on momentarily, well, the plugs was in on these other lights, and that momentarily could be caused by any of the other persons taking off the receiver of the telephone in
113 their offices. It could be caused in that way. For
instance, say there was a lightning storm going on and the person raised the receiver up and decided not to telephone because of the thunder and the lightning and put it right back, the lighting of the lamps would have happened as I saw it. (Tr. p. 240.)

All the people in all the branches could leave the receivers off at the same time. That has happened. (Tr. p. 240, 241.)

At that time this switchboard was located in the main corridor. I am not mistaken about that. It was not in the little room off the main corridor. I am morally certain of that.

As to whether it is not a fact that the position of the switchboard was changed after this incident of June 6, 1934, it may be; it may be you are right. It has been so long ago I have forgotten. My memory is not as good as it was years ago. My memory is not as good as it was forty years ago. I am 64. I do remember that the switchboard was in that little room on the left as you enter the building. It used to be in there. I do not remember whether it was or was not in there at the time I have been talking about. I remember when it was moved but still the date I could not say. I paid no attention to it. It did not concern me. (Tr. pp. 241, 242.) I mentioned the fact that I

made a record of all calls. The way that record was made was that if the Superintendent called we put down the number he calls and the branch he calls, and the time it was called, and signed his name. When Captain Hellweg called this afternoon, I did put down the time he called.
114 That was put down on a sheet. I do not know where those sheets are kept. The chief clerk might tell you. I do not know where they keep them. I do not hand them to the chief clerk. I put them in a drawer in the table and Mr. Gingress takes them. I suppose he turns them over to the chief clerk but I have never asked him. I do not recall how many calls Captain Hellweg made that afternoon. I haven't the slightest idea. After this incident of which I have spoken, about the light coming on the board, I do not remember Captain Hellweg calling the manager of the telephone company. (Tr. p. 242.)

He probably did make a call shortly after this incident which I have mentioned, but there are so many people that make calls I do not pay attention to them. I just give them whatever they want. I do not remember whether he called the same number that afternoon, but whatever calls he made I recorded them. Every time anybody makes an outside call it is recorded on that sheet. This little room in which the switchboard was located before it was moved out into the main hallway corridor was to the left of the entrance as you went into the building. It was a room, I should say, 8 by 10, and it had two windows in it, one on the east side and one on the west side. When this switchboard was in the little room, the back of the switchboard was toward the door, toward the corridor. That is the door that led into this little room. And when you would be sitting at the switchboard, the windows would be at your right and at your left. (Tr. pp. 243, 244.) I did not see any lightning through the windows. I saw a flash. I
115 heard a crackling noise. I saw these lights on the switchboard. I did not say I saw a flash on the switchboard. I saw these lights light up. I said something about hearing some noise in the switchboard. I heard that when this flash of lightning occurred. I did not see a flash of lightning. I could see a reflection of it in the windows. I saw a reflection of the lightning through these windows, in the room I was in, and I heard the thunder. (Tr. p. 244.)

And then I heard this noise which was something like a tearing noise, like a noise like you were tearing a piece of canvas. I continued to use that switchboard that afternoon. I got the calls and put them through properly. The switchboard was operating all right. I have operated that switchboard ever since. I had no trouble with it and it was not put out of commission that day. I do not remember Captain Hellweg calling any more that afternoon. I do not remember when he left that day.

Thereupon, on redirect examination, the witness further testified: At the time these lamps light up, when someone is trying to get a connection at the switchboard, the buzzer rings simultaneously, if it is not turned out. Sometimes we have to turn it off temporarily. (Tr. p. 245.) When these lights lighted up I do not remember whether or not the buzzer did ring. As to whether I ever had four or five calls being made from the Observatory at the same time while I was on the switchboard, we have sometimes four or five waiting to be served. I never have had four or five lamps light up at the same time, unless someone raises their
116 receiver. I have never had four or five lamps light up and then have them go out at the same time. (Tr. p. 246.)

On re-cross-examination, the witness further testified: I have had four or five persons at these several branches trying to get me at the same time, and the way I knew they were trying to get me was because the board lighted up. As to whether some of them might have gotten tired of waiting and put the receiver up, as a rule a local call does not get tired of waiting. If you call me and tell me to get a number, sometimes it takes fifteen or twenty seconds for the operator downtown to answer and while I am waiting to get the operator, there may be three or four calls and they have to wait for me. (Tr. p. 246.) While those several lights are lighted, if those persons put back the receiver, the light goes out. The buzzer is always on. I temporarily take it off. If I am talking to you and another call comes in I reach up and silence the buzzer but when I am through talking to you I put it back on. I do not know whether on this occasion I heard the buzzer. I have never had four or five lamps come on all at one time and then hear a crackling noise through the switchboard. (Tr. p. 247.)

Thereupon, further to maintain the issues on his part joined, the plaintiff called as witness **Mrs. Mary E. Hilton,** who, having been duly sworn, testified as follows: I am employed at the Naval Observatory and have been since 1927, as stenographer, principally to the Superintendent. Captain Hellweg is Superintendent. I was employed there on June 6, 1934. I know something happened to Cap-
117 tain Hellweg on that day. I did not see it. I did have occasion to see Captain Hellweg that same afternoon, after the occurrence. The whole side of his face was inflamed. That afternoon, he dictated a letter to the telephone company, and left immediately afterwards. (Tr. p. 249.) It was late in the afternoon. I don't remember the exact time. He complained his head hurt him. He said he had a splitting headache. Prior to June 6, 1934, I did not have any difficulty in making myself understood by Captain Hellweg in conversation. Since June 6, 1934, he asked me to repeat quite frequently. Since the date of this accident he sits right next to the telephone and several times I have called his attention to the phone ringing. He did not hear it. Also I have to come from my own room into his and tell him the telephone is ringing. My room is right next door to his room, in the same room which is occupied by Mr. Dickey. (Tr. p. 250.)

Frequently, since the accident, Captain Hellweg asks me if I have written letters which he has signed very recently. That had not happened before this accident. I did not notice it.

Thereupon, on cross-examination, the witness further testified: My office was right next door to Captain Hellweg, in the same room with Mr. Dickey. In the afternoon of June 6, 1934, Captain Hellweg rang for me to come to his office. He has a buzzer to call me. It was late in the afternoon when he called me but I don't know the exact time. I could not say for certain that it was after 4 o'clock. I know it was very late, and after dictating, he told me
118 not to bother to write that letter, that it was too late and to wait until morning to write up the dictation. It was near closing time. I do not remember whether there was anyone else in the room when I went in there. (Tr. p. 251.)

I know Dr. Robertson. I don't remember whether he was in there, or not. I don't remember anyone being in there.

When I went in the room Captain Hellweg was sitting at his desk. I sat down and took the dictation and wrote the letter next morning. I probably did that because he told me it was too late to write it that afternoon.

Thereupon, there was exhibited to the witness a letter of June 6, 1934, to the Chesapeake and Potomac Telephone Company, and after examining it witness testified she recognized the signature of Captain Hellweg and identified it as the letter which he had dictated to her on the afternoon of June 6, 1934. (Tr. p. 252.)

I wrote the letter on June 7, but I may have started it on June 6. A portion of the letter was read to the witness in which it is stated: "I have just telephoned", and witness testified, so I think—that will show that he had just telephoned. He had just telephoned and then dictated the letter and I wrote it up and dated it the day he dictated it. That letter refreshes my recollection as to the time I went in there. It was late in the afternoon, I know that, but I can not be exact to the minute I was in there. (Tr. p. 253.) I did not mail the letter. The messengers mailed the letters. They are taken to the file room and then the messenger mails the letters. On that day Captain Hellweg 119 left the office as soon as he had finished dictating the letter, about five minutes after he dictated it. When he dictated the letter he dictated intelligently. He went away from the office alone. I did not see him leave. I saw him leave his office and go down the steps but I did not see him drive away. I could not say when I saw him, when he came down the next morning; I am not positive about that. I do not know how long he was there the next day; I don't remember. I could not exactly say when was the first time that I noticed that he appeared to have difficulty in hearing me. It has been quite awhile ago. I should say about two or three years ago. (Tr. pp. 254, 255.)

This incident about which I wrote that letter happened on June 6, 1934. That is nearly four years ago, and I think it was two or three years ago that I first noticed that he appeared to have difficulty in hearing. It has been about two or three years ago that I first noticed he appeared not to hear the telephone when it rang. It has been within the last year that I noticed that he appeared not to have good memory. When I first went into his office to take this dic-

tation, on the afternoon of June 6, 1934, I observed some redness on the side of his head. It was all down the right side, especially at his right temple, and extended all the way down. (Tr. p. 255.) It was toward the temple, toward the hair. It was right around the temple region, and then it extended down along his face. I am sure of that. It was on the right side of his head, and the whole side of his face. It appeared to be very red. I could not say positively how long that condition continued. I can not remember
how long. I saw him practically every day until
120 about August, and then he went on his vacation. I
remember that. He usually takes his vacation in
August. He went on his vacation about the middle
of August. (Tr. p. 256.)

As I remember it, this redness had not disappeared when he left. It was a round spot up there on the side of his head and then little bumps came out and that red spot stayed there quite awhile and it was there when he came back from his vacation. When I first saw it, it covered the right side of his face and his head. It was reduced down to this small spot when he came back from his vacation. It was diminishing, but it was still there on his head when he came back from vacation. He had this red spot there and he had some little protruberances or bumps on it. I should say the spot was about the size of a fifty-cent piece, and had little protruberances or bumps on it. That lasted a long time. I could not say exactly how long. (Tr. p. 257.)

Thereupon, further to maintain the issues on his part joined, the plaintiff called as a witness **Daniel W. Conway,** who, having been duly sworn, testified as follows: I am employed at the Naval Observatory as an electrician and have been so employed for about a year and a half. Prior to that time I was employed in the Interior Department at the State, War and Navy Building, as electrician, for about six months. Before that I was employed in the Internal Revenue Building, as electrician, for about six months. Before that, I was with the United States Coast Guard, as
telephone man. (Tr. p. 258.) As telephone man with
121 the United States Coast Guard, my duties related to
installation required in the telephone systems at
their several stations. I was employed in that capacity for about six months. Before that, I was employed by the

City of Baltimore for about four years as electrician installation inspector. Before that, I was with the City of Baltimore on two occasions; one time, before that, as electrician at the City Hospital in Baltimore. I was employed there as electrician for four years. I was employed by the Chesapeake and Potomac Telephone Company of Baltimore, from 1905 to 1919, fourteen years. (Tr. pp. 259, 260.)

I was employed by the Chesapeake and Potomac Telephone Company of Baltimore for four years, installing subscribers' station equipment. As inspector, my business was to make calls, of course, at the subscribers' premises and to see that the telephones were working; that they were in good order and also to make calls in the event of trouble. (Tr. p. 260.) To take care of trouble inside. When I speak of "inside trouble", that includes all trouble from the entrance wires to the building into the telephone on the inside; everything on the inside. In doing that particular kind of work, I was required to have peculiar knowledge of electricity. You are supposed to have a general knowledge of electricity principally of telephone work. I was schooled in telephone work prior to that time that I went into the telephone work. I received my schooling at the Chesapeake and Potomac Telephone Company. That consisted of fourteen years' training. When I was employed by the telephone company of Baltimore, I was given a handbook giving instructions with reference to the installation of telephones. (Tr. p. 261.)

122 From my experience with the telephone company and the training which I received with the telephone company in Baltimore, as to what it is that causes the lamps on a switchboard, the signal lamps, to light up while a line is in use on that switchboard, in answer to that I would say the only time that the line signal would light up, while the circuit is plugged in, while there was a conversation going on while the circuit is connected, would be under abnormal conditions. When I say "abnormal conditions," I mean, for instance, the cable had given trouble, some wiring had been short-circuited or grounded. That could be caused by too much current coming into the switchboard. (Tr. p. 265.)

As to whether I am familiar with the P. B. X. switchboard at the Naval Observatory, I know the principle of its opera-

tion. I know the principle of its construction. As to whether I know what mechanism or what electrical equipment is used in that particular switchboard, which would bring about the lighting of the signal lamps on the switchboard, my answer is, now, from each telephone on the premises a wire goes to one central point, that is, the switchboard. Now, where it leads down to the switchboard, that wire is connected to a circuit, a signal lamp circuit. And when one calls on the telephone to the station, on the extension, as you may term it, so as to make a call, of course, they raise the receiver and that call is registered on the switchboard by means of that lamp signal. As to what would cause the lamp signal to light up, well, there is a relay or a battery on the line, a battery of 24 volts, and
123 that is what it is lighted from. And that circuit being closed from the subscriber—that is, the station or telephone being used, that circuit being closed causes your lamp to burn. That registers the call on the switchboard. There is a particular mechanism or instrument on the switchboard which comes in contact with some other object which causes the lamp to light up when the receiver is lifted from the stand. (Tr. p. 267.)

Thereupon, there was offered and received in evidence a photograph of the front of the switchboard, marked "Plaintiff's Exhibit No. 14". (Said exhibit is omitted from this bill of exceptions pursuant to stipulation of counsel.)

Said photograph was exhibited to witness and he testified that it fairly represents the switchboard at the Naval Observatory. Describing how those lamps light up by the use of some instrument or mechanism inside the switchboard when the hook is raised from the receiver, as I have said, when that receiver is raised from the hook, it causes the lamp on the main panel of the switchboard to light up and burn. Now, just above that lamp signal, there is a device known as a jack. The front of the jack is a hole; a hole in the panel, and the jack is mounted on the back of that panel. Now, whenever an operator wishes to answer that call she will pick up one of the cords she has at hand on the desk part of the switchboard, and insert it into the hole or into that jack. When she does that, that operation puts your lamp out and your lamp remains out until the conversation is completed, I mean, until that thing is pulled out.

You don't have to wait for the conversation. The
124 conversation should be completed. It is possible to
put it in and pull it out to light the lamp again, as
soon as the receiver remains off the hook. (Tr. p. 268.)

Thereupon, there was produced by the defendant three pieces of telephone equipment, consisting of jacks, lamps and cord with plug attached, being part of the switchboard equipment.

Thereupon, said three pieces of equipment, one with holes in the front of it, one with lights on the front of it, and one with a cord with a plug attached, were exhibited to the witness and witness was asked to tell what they are, and answered: This piece that I have in my hand here represents a strip of signal lamps. Where you see each one of those round red pieces on there, that is a signal lamp. This is the lamp cap and there is a small lamp just underneath that. Well, on this type of switchboard, you have a number of them. I think in this particular case there are ten. I mean ten in a strip. That is right—ten in a row. Now then, this strip is a strip of jacks. This is a jack, from the end of each one (indicating). (Tr. p. 269.) Of course, you see these connections, these connections are places where the wires are connected that are soldered to (indicating). This breaks up into different parts back here—that is where the wire to the switchboard is connected to the jacks. Now then, the lights or lamps are here, where the calls come in. Of course, we have a panel just that width and possibly eight or ten inches high, and these alternate.

Now, just above those strips of jacks, we find another
125 strip of lamps, and that is the way each goes (illus-
trating). When a call comes in, for instance, this
will light up here (indicating), and I am speaking of jack 5 and lamp 5. When the user of the telephone or the party wishing to make the call—when they take the receiver off, that shows up; that burns, the lamp under that cap burns and the operator immediately knows, of course, that he wishes to make a call.

And then he takes this—he has two rows of these. This is blank, of course. This is the cord from the plug. There are wires in these which are connected to the end portion of this plug. There are three wires, as a matter of fact, in that cord, and one goes to each portion of that plug. The end of that is the tip and that is the ring, and this is the sleeve (illustrating). This (indicating) is fastened to the desk. (Tr. p. 270, 271.)

When the operator wishes to answer that call, he takes up this plug and this cord and inserts it into the jack just that way (illustrating). When the plug is inserted into the jack, that light immediately goes out and you know the call is registered. As to what operation takes place in the jack which puts the light out, well, I might be able to show it right here. These are spring contacts to the jack. I am referring to the panel that contains the jacks. These are the jacks. These are the spring contacts. Now, when that plug is inserted just that way, these spring contacts here open up and the wire here is connected through to the plug and that operation causes that light to go out (illustrating).

126 Thereupon, said three pieces of telephone switchboard equipment were offered and received in evidence marked "Plaintiff's Exhibits 15, 16 and 17", respectively. (Pursuant to stipulation of counsel, said exhibits will be produced in the Court of Appeals upon the hearing of this cause.) (Tr. p. 271.)

Witness, resuming, testified: Exhibit No. 15 represents the panel containing the jacks; Exhibit No. 16 represents the panel containing the signal lamps; and Exhibit No. 17 represents the cord with the plug attached to the end of it.

Witness, resuming, testified that the photograph of the face of the switchboard (Plaintiff's Exhibit No. 14) shows, at the bottom of the panel, another line of jacks and lamps, and that particular line takes care of the lines coming in from the outside, known as trunk lines. This particular line of jacks appears to be used in the trunk lines.

Thereupon the witness was requested to step down to the jury and point out on this photograph (Plaintiff's Exhibit No. 14) the jacks to which he has just referred, where the trunk lines come in and, in doing so, he testified: In this picture we have a panel up here. These three lines are the jacks that we were just speaking of a moment ago, or the extensions of several telephones to the premises. And this line, below, here, which is one single strip of jacks, takes care of the outside lines (indicating), that is, the trunk lines on the outside. (Tr. p. 272.)

Thereupon, there was produced by the plaintiff and exhibited to the witness two additional pieces of telephone equipment consisting of an outside jack and the key 127 which is used on the switchboard, known as the operator's key. Said equipment was offered and received in evidence, marked "Plaintiff's Exhibit No. 18." (Pursuant to stipulation of counsel, said exhibit will be produced in the Court of Appeals at the hearing on this cause.)

This operator's key happens to be the head set (indicating). The way it is used, when the operator wishes to talk to the party using the telephone, he will throw that key, for instance, that way (illustrating), and that connects his head set, his own telephone, in on that circuit so he can talk to the party and find out what the party wishes. (Tr. p. 273.)

Referring to the photograph (Plaintiff's Exhibit No. 14), the photograph shows these keys mounted on the desk part of the switchboard. In addition to this key, as a matter of fact, there are two keys—one known as the listening key, and the other as the ringing key. Whenever a party is making a call and of course, wishes to speak to another party, the operator will then take up another cord immediately adjoining either in front or in the back, as the case may be, of the first cord, and put this key back, pull it back, after he has inserted the second cord in the jack; by means of this key, he is able to ring the other party. So that serves the two persons who are talking.

Thereupon, the listening key and the ringing key were offered and received in evidence, marked "Plaintiff's Exhibit No. 19". (Pursuant to stipulation of counsel, said exhibit will be produced in the Court of Appeals at the hearing on this cause.) (Tr. p. 274.)

128 Thereupon, the following hypothetical question was propounded to the witness:

"Mr. Conway, assuming that on June 6, 1934, the switchboard which is now in the United States Naval Observatory was there on that day, and assuming that on that afternoon Captain Hellweg had called the switchboard operator at the Naval Observatory and had requested a telephone number; the man at the switchboard had called central and shut himself off the switchboard; and assuming that it was raining and assuming that it was lightning outside and flashes were heard, that is, the reflections of lightning were heard and flashes of lightning were seen, and that the rumble of thunder was heard before and after the connection of Captain Hellweg's line to the switchboard in the Naval Observatory; and further assuming that Captain Hellweg—the plug from Captain Hellweg's line—was inserted in the jack in the switchboard, and the signal lamp was out, and that within the matter of a very short period of time, his signal lamp was lit up, in conjunction with several other signal lamps on the switchboard, lit up, and simultaneously flashed on for a second or a fraction of a second, and that there was a crashing and tearing noise coming through the switchboard, a crackling sound coming through the switchboard, can you tell us what, in your opinion, caused the signal lamps to light up and the crackling noise and the tearing sound in the switchboard that occurred?"

And the witness answered:

129 "Assuming that was the case, sir, I would say that, of course it was very abnormal conditions."

By "abnormal conditions" I mean something that rarely ever happens; the case suggested in the question, something that rarely ever happens. (Tr. p. 278.)

In my opinion that was caused by excessive current. When I say "excessive current", I mean excessive current coming into the switchboard through the means of the conductors leading into the switchboard. When I say "conductors leading into the switchboard", I mean the wiring, that is, the telephone wiring. That is it, exactly. (Tr. pp. 280, 281.)

Since I have been with the Naval Observatory, I have noticed the telephone lines in the attic, and other lines generally.

Thereupon there was handed to the witness the photographs, Plaintiff's Exhibits 4 to 12, inclusive, and after having examined them witness, resuming, testified: I have seen those telephone wires. They represent the lines. (Tr. p. 281.)

Thereupon, on cross-examination, the witness further testified: I worked for the C. & P. Telephone Company of Baltimore between 1905 and 1919. I have seen the photograph of this P. B. X. switchboard which is in the Naval

Observatory, and I have examined these models of the jacks and lamps on the face of the board. (Tr. p. 282.)

The telephone company uses 24 volts on the line. In order to communicate over any telephone line it is necessary to have electricity on the line and it is commonly known as
the battery. There is that amount of voltage on the
130 telephone line. 24 volts is a direct battery. 24 volts
is for the transmission of the sound waves, transmission of the message. They do have another voltage for ringing. That voltage is generated in the central office. I don't recall what that voltage is, now, but it is known as "ringing current". I couldn't say, offhand, what the voltage is, now. I don't remember that it is 100 volts. That would be quite high. I don't think it is in excess of 100 volts. When I was with the telephone company during this period of 14 years, I possibly did know at that time what the ringing voltage was, but there has been a lapse of time since I was with the telephone company, and I have not kept up with that since. I do not remember about that. (Tr. pp. 283, 284.)

I am not familiar with the installation of the wires of the telephone company in the Naval Observatory. I am familiar with the installation of the telephone wires generally. The telephone wires which go underground are carried in cables. The telephone wires are carried in what are known as pairs; you have two wires going to each instrument. And those wires are thin wires.

Thereupon there was handed to witness a piece of cable and he was asked to look at it and state whether or not that is what he understands as a piece of cable carrying pairs of wires used in the telephone service. (Pursuant to stipulation of counsel, said piece of cable will be produced in the Court of Appeals at the hearing on this cause.)

Witness, resuming, after having examined cable, testified: That appears to be a telephone cable. These
131 wires are each insulated, one from the other. Holding two of these wires in your hand, that constitutes a pair of wires for the operation of a telephone. (Tr. pp. 285, 286.) Those wires appear to be wrapped with cotton. In some cases, they are wrapped with paper, but not in all cases. It is either paper or cotton; inside of this wrapping there is a copper wire, and then between all these wires,

they are insulated, one from another, as they appear in this piece of cable. Then, around the whole group of wires, there is additional insulation, and then, on the outside, you have a lead sheathing. That is the outside protection to keep the moisture away from it. (Tr. p. 286.)

I know what is known as a protector block. In the central office station the protector strip in the central office station, or block as you term it, is mounted on a frame in the terminal room of each central office. The purpose of that is just for the protection of equipment of the central office, protection from excessive current or volts coming in on the line from the outside. If excessive current came in this switchboard and the switchboard was connected with the central office at the time, that current might be in the central office also. It would have to be in the central office also; I suppose it would have to be. Everything being equal, it would. By "everything being equal", I mean in the event that there was not any leakage which went out of the central office. I mean unless it was grounded where it could get off. Assuming that the switchboard was connected with the central office and an excessive amount of 132 current came into the switchboard at the Observatory, then that amount of current would be on the whole line and go into the exchange. These protector blocks about which I spoke are put in the line in the exchange for the purpose of protecting the equipment against any excessive current that might come in on the line. As to what voltage can get in on the line without operating the protector blocks, well, I can not answer that exactly, definitely. I don't recall just what you might term to be the maximum amount of voltage they are supposed to withstand, but we know it can not be much more than 24. It ought to be a little more than 24, of course, in order to carry the usual amount of voltage. (Tr. pp. 288, 289.)

As to what would be the protection needed, assuming the voltage ordinarily used was 24 volts, well, I suppose about 30; approximately 30 or 35 would be enough. That would be enough to carry it. That would be adequate, I suppose. I mean that if you would have protector blocks to protect you against anything over 35 volts, I think that would be about right.

As to whether I know what the insultation on these wires that went into Captail Hellweg's office were tested for, I can not answer that. I do not know what the voltage is there.

As to whether I know what voltage would break down the insulation on the pair of wires which went into the switchboard and were connected with the Captain's branch exchange equipment, well, that insultation there, of course, is not very heavy. It probably would withstand, maybe,
500 volts. (Tr. p. 290.) The chances are it would
133 break down at 500. Assuming that you had sufficient
voltage to come in on this line, that is, this pair of wires, such as the pair which was exhibited to you, that is, to the witness, and the insulation would break down, say, at 500 volts, as to what would happen, I can not answer that; I am not positive. I do not know whether they are or not.

I have done quite a good deal of inside work. When you go to a place like this, for instance, where you have a P. B. X., the telephone company has what is known as a terminal box in the attic. In that terminal box you have the cable, of course, coming from the switchboard. On one side of that strip you have the wires going from the cable to the switchboard, and on the other side of the strip you have wires leading to the several telephone instruments. (Tr. p. 291.) From the outside of the Observatory, you have a cable with wires and then when you go into this attic where you have this terminal box the wires are connected to the terminal ends or lock nuts; and when you go from the terminal box to the station, whatever it is, say, the Captain's room, for instance, you do not have a cable but you have a flexible wire. As to whether the wiring goes from the terminal box into the attic and the station equipment at the Captain's desk isn't a wire similar to these wires in this cable as to insulation, well, not in reference to insulation. It is similar, as far as the makeup and the construction of that type of wire is, and probably the size, but the insulation is a little different. The whole make-up of the wires
is different from that particular cable. (Tr. p. 292.)
134 You have pairs of wires, and all these pairs of wires,
the individual wires, are insulated but it is not precisely the same as this. As to what kind of insulation it is, well, it is rubber insulation directly over the wire. The wire, itself, and the conductor, itself, is encased in rubber

and immediately over the rubber is a braid insulation. That is what the telephone company uses at its stations. I mean, next to the copper, is rubber insulation. Then, over the rubber, is cotton braid, and there is nothing over that. The cotton braid is the outer covering. (Tr. p. 293.)

Thereupon, defendant produced and exhibited to witness a coil of wire. (Pursuant to stipulation of counsel, said coil of wire will be produced in the Court of Appeals at the hearing in this cause.)

Whereupon witness, after examining said coil of wire, testified: He recognized that as the kind of wire which goes from the terminal box to the station. That seems to be the wire that is usually used to feed the stations, or to connect the stations from the terminal. When this wire got excessive current so that the insulation would break down, you would immediately have a short-circuit and a ground. You would fuse the ends of the wire together, burn them. It would cause a short-circuit. (Tr. pp. 293, 294.)

I mean by that the excessive current would burn off the insulation and would expose the wires and instead of them being separated from each other, they would be in immediate contact with each other; and instead of having insulation on the wires, you would have what is known as fusing, which would fuse the two wires together and bind
135 them, and then you would have a short-circuit so that
you could not get the message through them. If the excessive current got on there to cause that condition, it would put the telephone out of commission and put the switchboard out of commission. As to whether it would not do that in any case, well, sometimes when you have an exceptional case. Now, of course, when you deal with light current, such as 110 volts, A. C., the power current, then you can reach some definite conclusion. I say "light current", 110 volts, A. C. (Tr. p. 294.)

"A. C." is alternating current. Alternating current is not always 220 volts. Ordinary light is always 110. In Washington, 110 is for either direct or alternating current. At the Observatory, we have alternating current. It is stepped down to 114 volts, by putting it through a transformer. The transformer is on the outside, in the shipping room. A transformer is an instrument which contains a series of copper wires insulated from each other where the current comes in one side at a higher voltage and gets this resistance of the copper wires on the inside and goes out at a lower voltage at the other end. We have that sort of an instrument there, whether it is inside or out, which reduces the voltage down to 114, and that is used for our lighting at the Observatory. (Tr. p. 295.)

Speaking about the telephone system, as to whether if an excessive current came into this telephone line, it would not cause a fusing of the wires and the destruction of the insulation and disabling of the telephone service, my answer is it would not ordinarily affect the whole system. It
136 would in all probability affect that one particular circuit. As to whether it would affect the switchboard, well, it all depends on the amount of the voltage that comes in there, the amount or capacity of the current that comes in there. You understand that would go into the switchboard. That is about the only way you might judge of the result of excessive current.

Thereupon, the following hypothetical question was propounded to the witness:

"Now, assuming in this case that the Captain took off his receiver and signalled the operator at the P. B. X.; the operator then plugged in on the trunk and called the exchange, and the exchange operator answered, and then he gave the number and then he cut himself out, and then soon after that these lights came up on the board, the light below the jack on the branch going to the Captain's office, and several others; and then within a short time after that the Captain again signalled the operator and the operator put a call through for him to another exchange, this phone of the Captain's being on what is known as the Decatur exchange, and he put a call through to the North exchange, and then within five minutes of this time, or such a matter, he put another call through for the Captain to the manager's office of the telephone company, and in each case the telephone P. B. X. operated properly, without any indication of anything being wrong with it; taking those facts into consideration, would you still say that there was ever any excess current coming into this switchboard?"

And the witness answered:

137 "Well, sir, as long as there were a number of telephone calls made, a number of calls made at the sta-

tion following that condition, it would not appear that there was any damage done.

"The Court: To the system?

"The Witness: To the system." (Tr. pp. 297, 298.)

If excessive current had gotten on there, you could not have had the conditions described in the foregoing question; my answer is it depends on what kind of current came on this line. I do not know what kind of current came on there. I was not there. I don't know how much excessive current came on there. The amount of current to light the light would be 24 volts. I do not know whether more than 24 volts came on there, or not. (Tr. pp. 298, 299.)

On redirect examination, the witness further testified: I am familiar with the noise that comes from tearing a piece of canvas, I think I am. Assuming that the noise coming from the switchboard was like the tearing of a piece of canvas, it is my opinion that it must be excessive voltage to cause such a noise. Ordinarily, 24 volts would not cause that noise. The ordinary voltage on the line is 24 volts. (Tr. pp. 299, 300.) I do not know what kind of a noise this was. I haven't any idea. I do not know whether the noise that the man heard was the noise of thunder or what kind of a noise it was. And, from that, I am unable to say what kind of voltage would have caused that noise. When I answered that question, I took into consideration that that noise emanated from the switchboard. I took that into consideration when I answered it. When I answered
138 the question whether it was more than 24 volts, I did
take into consideration that the noise came from the switchboard. I took that into consideration. (Tr. p. 301.)

Thereupon, further to maintain the issues on his part joined, the plaintiff called as a witness **Mrs. Marguerite Alderman** who, having been duly sworn, testified as follows: My full name is Mrs. Marguerite Alderman. I live at 1516 31st Street, in Georgetown. On June 6, 1934, I lived at 1814 24th Street, with my husband, Mr. Sidney Alderman, who is associated with the Southern Railway Company. I have a recollection of having received a telephone call from Captain Hellweg on June 6, 1934. I could not tell you the exact time of day but it was after lunch between, I would say, 3:30 and 4:30. That call came to me at my home, 1824 24th Street. (Tr. p. 302.)

Mrs. Hellweg was with me at that time. She is Captain Hellweg's wife. The maid at first answered the telephone, and then called me. I did speak to Captain Hellweg over the telephone. I had talked to Captain Hellweg on the telephone on many occasions before that and I had known him for about eight years. I talked with him since this occurrence and I know his voice. When I answered the telephone, it was Captain Hellweg's voice that I heard. (Tr. p. 303.)

I carried on the kind of a conversation with him enough to know that he wanted to speak to Mrs. Hellweg. What happened was just the big crash of lightning or thunder, a terrible noise, and then I could not hear anything. I did not hear any noise beside that of the thunder. I heard the first noise of the thunder. It was during the storm.
139 I said I heard a big noise. It did seem to go from
the wall, from the line. After that crash of thunder and lightning, the phone did not work as it had before. When I say "the phone did not work as it had before", I mean I could not hear very well. I could not hear anything. I do not know how to explain it. I do not know if the electric buzzer rang, or something, anywhere. It wasn't any noise outside, but in the house. It was right in the phone. It was just after I had been talking to Captain Hellweg, when I was trying to speak with him. I was trying to speak with him. (Tr. pp. 307, 308.)

That day, or the next morning, I am not sure, but very shortly after, someone came from the telephone company to inspect our telephone. (Tr. p. 307.) Someone did come from the telephone company to inspect our telephone. I do not remember whether it was the same day or the next day, but it was close after the occurrence. I do not remember whether this telephone man made an inspection of the telephone. He was outside working most of the time. I do not remember whether he used our telephone in the house. I think he remained there for a long time, I would say, maybe an hour. He saw me when he left. (Tr. p. 309.)

Thereupon, on cross-examination, the witness further testified: On the afternoon of June 6, 1934, Mrs. Hellweg was visiting me. Sometime that afternoon, between 3:50 and 4:50, my telephone rang and our maid answered the phone and then called me. I went immediately to the tele-

phone from the sittingroom to the butler's pantry.
140 I went from one room to the other. The telephone is located in the butler's pantry, between the kitchen and the diningroom. When I was called I was in the sittingroom, next to the dining room. The telephone was fastened to the wall. (Tr. p. 311.) When I got there, the receiver was off. The maid had left it off. I took up the receiver, put it to my ear, and spoke to the person who was on the line, and I recognized the voice as that of Captain Hellweg. He first said" "Good evening, Mrs. Alderman. May I speak to my wife? I think she is with you." He may have asked me how I was, or what you usually say on the phone. I don't remember exactly his words. I know he was calling me because he wanted to speak to Madam Hellweg. Then I took the receiver from my ear and went to call her. She went to the telephone. (Tr. p. 312.)

When I went to call her, I put the telephone receiver right on the buffet in the butler's pantry, and she did go there and pick it up after I went and called her. Then, I was back in the sitting room with my guests, and then she came back. When I called her I went back to the sitting room with my guests. I did not go to the phone at all. I heard the thunder when I was first speaking with Captain Hellweg. I heard it at the time I was speaking with him. I never heard but one noise. It was the loud report of thunder. (Tr. p. 313.)

Thereupon, further to maintain the issues on his part joined, the plaintiff called as a witness **George A. Gingras,** who, having been duly sworn, testified as follows: I
141 am employed at the Naval Observatory as foreman of the upkeep section, and have been so employed for about 13 years. I know Captain Hellweg very well. He is superintendent of the United States Naval Observatory. In the performance of my duties at the Observatory, I take care of the mechanics and laborers and guards, take care of the whole ground and of the buildings. The equipment in the buildings comes indirectly under me. Those men under me take care of the various things, and I supervise them. (Tr. p. 314.)

In the course of my duties, I did have occasion to see the telephone wires in the attic of the Observatory. I can not say I go to the attic frequently. I seldom go there. I did not go up to the attic with the telephone men after June 6, 1934. I do not know whether or not any telephone men ever went up to the attic after June 6, 1934. The key to the attic is in charge of the watchman at the desk, the front door. (Tr. p. 315.)

The employes with the Naval Observatory can obtain their key. If anybody else takes the key, somebody goes up with whoever gets the key. I do not know whether or not there has ever been any change in the construction or maintenance of the telephone wires in th attic after the date of this accident. I do not know that. If I was on duty at the time, I would have knowledge of it. Any records made of any changes are not made to me. Records about taking telephone calls made at the Observatory come through me just for a short period. They are made to the chief clerk. Well, I have them in my possession for a few minutes, I should say. The main purpose of making reports on
142 telephone calls is to check on toll charges, and the
secondary purpose is to check up on the outside calls, to determine whether or not the calls were made for business or personally. (Tr. p. 316.)

The chief clerk keeps the records in his possession until the bill is rendered and paid, then, they are destroyed afterward. I did search to ascertain whether or not there was a record of the telephone calls on June 6, 1934. I made that search yesterday at the request of counsel for plaintiff. I was not able to find that record. They had been destroyed. They were destroyed shortly after the bill was rendered for that month. I do not know when the bill was paid. As to when the vouchers go out, that is information at the Observatory but I don't know personally. There is scientific equipment stored in the attic room and I am more or less responsible for it. (Tr. p. 317.) I am responsible to the Superintendent for the stuff kept in the attic. I do have occasion to check over the equipment in the attic. I should say I do that, maybe, once in two or three months. And in checking that equipment I do have to pass these telephone wires which are installed. They are all right on the wall. I could not say that there is anything about those telephone wires which would indicate to me that there had been any change. Of my own personal knowledge, I do not know whether any inspectors from the telephone company

came out to inspect the equipment in the attic after June 6, 1934. I do not know when an inspection was made prior to June 6, 1934. Any general inspection—I see them occasionally at the switchboard and in the basement at
143 the battery cabinet, but outside of that I don't see them on any inspection. (Tr. p. 318.)

Thereupon, on cross-examination, the witness further testified: As to whether those men may have come there many times at the Observatory and I not know anything about it, my answer is, not up in the attic, but in the basement, because I have given word to the watchman to let them have, go over their equipment in the basement. What is up in the attic is not considered as equipment by me.

At this point a coil of wire was exhibited to witness and he testified: I do not know when this wire (indicating) was taken out which led from the attic down to Captain Hellweg's office. I do not remember that I was there on June 13, 1934. I do not know as a fact that the linemen of the telephone company went there on June 13, 1934, went up in the attic where this wire ran, and took this wire out and put a new wire in on that date. I do not know whether they did, or not. (Tr. p. 319.)

Thereupon, witness was recalled and further testified, on direct examination, as follows: I am familiar with the construction of the roof, that is, the material used in the construction of the roof, at the United States Naval Observatory. The top of the roof is sheet copper. The roof is laid on iron beams which rest on the brick walls of the building. The ends—beam ends are right in the building. They are on two walls, the two center walls. That is the contact, itself. The ends of the beams are exposed. There are telephone wires right close to those beams, I think, maybe within two inches. There are points where the tele-
144 phone wires are close to those beams. I do not know just exactly how many points, but I should say maybe a half a dozen. That was the same condition which existed in 1934. (Tr. pp. 344, 345.) That condition has existed as long as I have been there—13 years.

Thereupon, there was handed to the witness photograph (Plaintiff's Exhibit No. 12) and he testified, that is an exposed beam right here (indicating). Thereupon, witness took a pencil, walked over to the jury, and pointed out the exposed beam on the photograph (Plaintiff's Exhibit No. 12.)

Thereupon, witness was handed photograph (Plaintiff's Exhibit No. 8), and he testified: There is an exposed beam that appears in that photograph; it is right here (indicating), and the records indicate it.

Whereupon, witness pointed out to the jury a white spot on the photograph, which is an exposed beam.

Thereupon, witness was handed photograph (Plaintiff's Exhibit No. 7), and he testified: There are exposed beams appearing on that picture, and witness pointed out to the jury the exposed beam on the photograph. (Tr. p. 346.)

Thereupon, witness was handed photograph (Plaintiff's Exhibit No. 6), and he testified: There are exposed beams which appear on that picture, two of them.

Whereupon, witness pointed out to the jury the two exposed beams appearing on the photograph.

Witness, resuming, testified: There are telephone wires that appear on the photograph (Plaintiff's Exhibit
145 No. 6). (Tr. p. 347.)

Whereupon witness pointed out to the jury the telephone wires which appear on the photograph (Plaintiff's Exhibit No. 6).

Thereupon witness was handed photographs (Plaintiff's Exhibits Nos. 7 and 8), and he testified that there are telephone lines appearing on those photographs, which he pointed out to the jury.

Thereupon, witness was handed photograph (Plaintiff's Exhibit No. 9), and he testified that he saw exposed beams on that photograph, and that there were telephone wires appearing on the photograph, and witness pointed out to the jury the beams and wires. (Tr. p. 348.)

Witness, resuming, testified: They are steel beams, commercial steel beams. The beams come in contact with the roof but they are not attached to it. They are attached to it through pipe hangers and pipes. There are skylights in the attic.

Thereupon, witness was handed photograph (Plaintiff's Exhibit No. 10), and he testified: There is a skylight appearing there; and witness pointed out to the court and jury the skylight shown in the photograph. (Tr. pp. 349, 350.)

Thereupon, witness was handed photograph (Plaintiff's Exhibit No. 5), and he testified: That does not show a skylight. It shows a ventilator. It shows a ventilator with the heating pipe by the ventilator; and witness pointed out to the jury the ventilator shown on the photograph.

Thereupon, witness was shown photograph (Plain-
146 tiff's Exhibit No. 10), and he testified: Yes, there is
a skylight on No. 10. And witness pointed out to the jury the skylight on the photograph. The skylight is just like a raised deck on the roof. (Tr. pp. 350, 351.)

Thereupon, on cross-examination, the witness further testified: The Naval Observatory Building, I should say, is about 200 feet long and a two-story building. I should think it is about 60 or 70 feet thick. It is a building 200 feet long by 60 or 70—something like that, I have never measured it. It has two stories and a deck constructed of stone. I can not tell you what is inside the vertical walls. (Tr. p. 351.) I can not say that there is steel construction inside the vertical walls. I have been to the attic. I have not seen the wall beams; I have seen the floor beams. I mean the beams under the floor. They are of steel construction, a steel beam in the floor of the attic and through all floors. The flooring is hollow tile and concrete and wood and in the halls it is tiles. The flooring is of oak. I can not tell you whether these beams rest on plates in the walls. I can not tell you where the beams are resting, and I could not see the beams in the walls. I go up in attic frequently. (Tr. p. 352.)

I was there when these photographs (Plaintiff's Exhibits 4 to 12, inclusive,) were taken. I went up there with the woman photographer at the Observatory. I took the pictures. I went up with the photographer but I took the pictures. The woman photographer is Mrs. Day. I took the
pictures. No one else went up with us. I was acting
147 under the instructions of Captain Hellweg. He did
not tell me what pictures to take. He told me to take pictures of the telephone wires in the attic, and the iron beams.

Thereupon, the attention of witness was called to the pipes shown on photograph (Plaintiff's Exhibit No. 12), and he testified that they are steam pipes in the ventilator to draw the air from the floor, and it is an indirect heating system. It is a hot water heating system. The other thing shown on the photograph is just for the louver of the ventilator. (Tr. p. 353.) The function of these pipes is to create heat, or hot air, up there, to draw the air from the rooms below, in the louver to start the circulation of air. Witness was asked to explain to the jury what that is, and he answered: I am no engineer, and I can not explain the technicalities of the louver. I am telling you what that louver is. Do you know what the louver is, after me explaining it? It is to create a circulation of air.

The attention of witness was called to a marking on the wall, shown on the photograph (Plaintiff's Exhibit No. 12), and he testified: I put that marking on the wall and I guess I did that before I took the photograph. I was marking the path of the telephone wire. I could tell it was a telephone wire because, outside of my equipment up there, the rest is the telephone company's. We do have equipment in the attic. (Tr. p. 354.) It is the electric type. We do have wire equipment up there. The telephone man was up there taking the same pictures at the time I was. I was there at
the time the telephone man was taking the pictures.
148 I went up with them. I did not take my pictures
when they took their pictures. I took pictures later
on. I took pictures the same as they did. Not the same kind of pictures, because they had a professional photographer along taking pictures. I knew that was a telephone wire because it goes down to Captain Hellweg's telephone. It goes out through an air duct through the wall and to a molding and by the molding and down to his desk. I did not trace it to see, but I have seen it before in his office. (Tr. p. 355.)

I have seen the telephone wire going into his box. I have seen the telephone wires going out through the floor. I did take up the floor. I had my wires there, enunciator wires. They run in the opposite direction from the telephone wires, and I took the board off; and when the board was taken off I saw the telephone wires. In this photograph (Plaintiff's Exhibit No. 12), I had that white object on the wall as a beam. That is an I-beam. That is an I-beam that extends inside the attic. That flat surface shown there on the photograph is the bottom of the I-beam. (Tr. p. 356.)

I should imagine that the I-beams are about 8 inches by 4 inches. I have already looked at the I-beams shown on

this photograph, No. 12. I do not know how far that wire shown in the picture is from the I-beam. I should imagine it was about 3 inches in that particular spot. It may be a little more than that, but it is close to that—I should think about 5 inches. That is a 4-inch beam, and it is about 5 inches. The wire which is shown by the white marking on this photograph (Plaintiff's Exhibit No. 12) looks to
149 be about 5 inches from the I-beam. That I-beam is not in contact with one of those pipes. That line which runs from the bottom to the top is the I-beam. It is not in contact with the pipe. (Tr. p. 357.) I should think that the I-beam is about 3 or 4 inches from the pipe. You are looking sideways. That is right in the back of it. That is on my finger. The beam is not near the pipe. It is not touching. This wire which is marked is the wire that goes out to Captain Hellweg's office. On this photograph (Plaintiff's Exhibit No. 6) I have a white mark. That is the telephone wire, and the one that is coming up from Captain Hellweg's office. This Photograph No. 6 shows the ceiling. It is at a little different place in the attic. You can still see the pipe. That is taken from this side of that room and that is taken from the other side of the room. I am just showing you where that beam is. This I-beam on photograph Plaintiff's Exhibit No. 6, is the same one as on photograph, Plaintiff's Exhibit No. 12, this one. There is another I-beam here (indicating). (Tr. p. 358.)

That is not shown on photograph, Plaintiff's Exhibit No. 12. On this photograph, No. 6, I have marked a white line on it, and I say that is the line of the telephone wire that went into Captain Hellweg's office. On the photograph, Plaintiff's Exhibit No. 8, I do not have a line marked on the ceiling, that is, on the side of the ceiling. That is a continuation of this. That is near the ceiling and pretty close to the top of the attic. It runs along the wall. It is a little closer than the picture of the rail over there. It is
150 closer to the ceiling.

Then, I had another wire shown here. That is the terminal box. This (indicating) is a clock wire. That is an Army cable. It is a B. X. cable, an Army cable. (Tr. p. 359) It is a flexible cable. It looks like it has joints in it; that is right. That goes into that terminal box. And the terminal box is very close to the I-beam. Maybe I can touch

it. I can not tell you. These I-beams do touch the roof; they rest on that center wall. They do not run clear across the attic. They run from one side of the corrridor in the attic down to the center of the building. The roof is partly a flat roof, and partly a gabled roof. I can show you on this photograph (Plaintiff's Exhibit No. 7) this building right here, which is flat. That photograph shows a ceiling in the attic. In the corridor the ceiling outside of this wall is at an eagle. That is the beam which you see. That is why you see the beam at one end, because it points at an angle. These beams are set into the walls all around. The roof comes on square from that. The wall comes on going straight up. It is like a small square roof on top of the whole building. Those beams support half of the roof on one side of the building. And then, above that, you have this marking, and that is a telephone wire. That is shown in this other picture. It is a continuation of it. On this photograph (Plaintiff's Exhibit No. 9), to the right, I have a white mark, and then turning at right angles. That is a lead cable, a telephone cable, and that runs into the terminal box; then, from the terminal box come these wires, and these wires
151 are shown in this bunch inside of this ring, and they go up to the top of the attic. I have a white mark made along that; that indicates the bunch of telephone wires. I haven't any idea how many stations in the Observatory were connected with this switchboard in June, 1934. I could not tell you that. (Tr. pp. 361, 362.)

On this photograph (Plaintiff's Exhibit No. 7), I have a marked line going along up near the ceiling and that is telephone wires. I did not say pipes were running up into the beams, but they are touching the beams. There are some steam pipes, and electric pipes,—no water pipes. The steam pipes connect with the water system through the boilers. The water comes in from the supply pipes outside. This building is connected with the water pipes in the ground.

In this photograph, No. 5, I show the ventilating system and that shows these pipes that are shown in the other photographs. (Tr. p. 362.)

The photograph, (Plaintiff's Exhibit No. 10), shows this junction box or terminal box which we have been talking about; and it shows the lead cable coming down to the box and then various wires coming to the station. That white line which I have marked along to the left of this junction box, that is the telephone wires. They run down into the office and connect with this telephone.

The electrical equipment belonging to the Observatory, which is now in the building, comes indirectly under me. I have charge of the electrician who is under my order. I am a sort of superintendent of maintenance of the
152 building and grounds. At the Naval Observatory we do have power instruments, such as lathes, and things like that, that run by power. (Tr. pp. 363, 364.)

We have computing machines on the second floor, run by motor. We use 110 volts. On the first floor we have some other motors, some three-phase, 220 volts. This photograph (Plaintiff's Exhibit No. 8) shows a wire that comes off the lighting system; and the light system comes in through conduits and cables; and that also is connected with the ground. So that that is grounded to the electrical system.

Thereupon, on redirect examination, the witness further testified: I am pretty sure that the terminal box is touching the I-beam. That roof is shaped like my arm, at the neck, except that it does not angle out all the way to the top. There is about a 6-foot flat roof, and parts of the roof following are flat. (Tr. p. 365.)

Thereupon, further to maintain the issues on his part joined, the plaintiff called as a witness **Walter L. Simpson,** who, having been duly sworn, testified as follows: My full name is Walter L. Simpson. I am living at the Powhatan Hotel, in Washington, D. C. I have the title of Colonel, and I am a Lieutenant-Colonel, resigned, from the United States Army. (Tr. p. 321.) I had two years in the Georgia School of Technology, through the sophomore year, 1902 to 1904. I then attended and graduated from the United States Naval Academy at Annapolis, Maryland. At the Naval Academy I received the general course which is given to all midshipmen, which includes civil, electrical, mechanical and
153 some chemical engineering. I resigned from the Navy almost immediately as soon as I could get the resignation through. Immediately following my resignation from the Naval Academy, I went with the American Telephone & Telegraph Company at Atlanta, Georgia. (Tr. pp. 322, 323.)

During the period I was with the American Telephone & Telegraph Company on that tour of duty, I occupied three different positions, first as a material man. I handled the materials for a sleet wreck, that is, a sleet storm which carried away all the wires in that territory. I had the issuance of all materials which it took to repair that storm. I was in that position about six months. That was about March, 1908—I imagine, March of 1909, I guess—that is 20-odd years ago. I was then made a maintenance engineer. There is very little difference between a maintenance engineer and a maintenance man—just the title. (Tr. pp. 323, 324.) I was not necessarily required to be an electrical engineer nor to be a maintenance engineer. I was simply going through that process. In fact, I was a cadet engineer. I was going up the line, so to speak. I remained in the position as maintenance engineer for about two years, as I recall it. My duties as a maintenance engineer were to maintain and install equipment in the Atlanta district. The Atlanta district of the American Telephone & Telegraph Company at that time covered the entire State of Georgia and part of Florida, South Carolina, Alabama and Tennessee. I was required to have a peculiar knowledge of electric wiring and electrical installation and electrical engineer-
154 ing. There was a technical knowledge required in
so far as that position was concerned. The duties of that position were the maintenance and installation of all telephone equipment having to do with the business of the company; that is the long distance equipment, telegraphic equipment, et cetera, within the plant. (Tr. pp. 324, 325.)

My duties at that time did not include the equipment of the Western Union Telegraph Company. The American Telephone & Telegraph Company had other telegraph companies associated with it, and it had other subsidiaries at that time, the names of which were: The Southern Bell, Western Union and Central Union—some 25 or 30 of them. I actually studied the installation work, myself, and I did comparatively quite a lot of work; I did much repair work. I was in that position for about two years, and I next went on the road as Assistant Installation Foreman. In that position, my duties were supervision or sub-supervision of the installation of telegraph equipment throughout the United States. (Tr. pp. 325, 326.)

I travelled throughout the United States, for the A. T. & T., during that time, for about a year. I then resigned from the company and went to West Virginia as chief engineer of a coal mine at Eccles, West Virginia, known as the New River Collieries, as chief engineer. My duties as chief engineer were general supervising officer of the coal mine which was being electrified. In that work I installed generators and had occasion to install or erect other plants. We installed three. Describing what I had to do with the
installation of these electrical plants at the coal mine,
155 well, I had direct charge of the design of the entire
plant, the generating plant, the mechanical plant for operating the coal mines, the electrification of the mine itself, the telephone system, and so on. (Tr. p. 326.)

I supervised all of that. In part I personally designed the method in which it should be done. I was so engaged there for about two years. I then went to the Western Electric Company which was a subsidiary of the A. T. & T. at that time. My position with the Western Electric Company was Designing Engineer. I was there, I would say, nearly a year. Before I left the New River Collieries, I completed my work for the design and installation and electrification of this coal mine and turned it over to an operating company. (Tr. p. 327)

The nature of my work as Designing Engineer for the Western Electric Company was the design of telephone and telegraph equipment for use in the A. T. & T. system and for general sale. Describing the nature of my work as a Designing Engineer, well, in the instance of a new design, the laboratory section would go into the business of specifying materials, for instance, and that information was then furnished to us in the design section, and from that information we designed the physical apparatus which was to do a certain function. We did not receive the specifications and from those specifications go to work and create a practical physical unit. We wrote the specifications. We received the requirements. That is to say, the companies
would write in and say "We want a relay to do a
156 certain thing", and then we proceeded to design that
piece of apparatus. That work required peculiar or special knowledge of electrical engineering. I did much work in designing telephone switching apparatus, that is,

the relay systems on the boards and on the relay racks, and so forth, to the central office. That does require telephone knowledge. (Tr. p. 328.)

I was there with the Western Electric Company for a year and afterwards, in New York. After that, I went to the Western Union in Atlanta as Division Equipment Engineer. There, I had the supervision of all the inside equipment in that division, the installation, maintenance and repair and other things that went to make it up. That applied to all the wiring except the poles. That was a different department. I was with the Western Union for about two years. That work required a special and peculiar training in electrical engineering.

My next employment subsequent to that was when I went to the Jacksonville Terminal Company at Jacksonville, Florida. (Tr. p. 329.)

The Jacksonville Terminal Company is a general railroad terminal, similar to the terminal here. There, I occupied the position of chief engineer. I was really employed to design and carry through the Interstate Commerce Commission requests for a new passenger station, but in that position I had charge of the mechanical and electrical and building equipment within the property. While I was there as chief engineer, I had direct charge of all their signalling systems, which is almost identical with the telephone 157 system, except that it does not go through the regular exchanges. That required peculiar and technical knowledge of electrical engineering. I was there, as I recall it, about fourteen months, and then I went back to the Western Union, at their request, as Division Equipment Engineer in the Pittsburgh district. That district consisted of all of Pennsylvania, part of Ohio, part of Kentucky, part of New York—western New York—and West Virginia. (Tr. p. 330.)

My duties in that position were the same as before. I had direct charge of the maintenance, installation and equipment. That work required peculiar and special knowledge of electrical engineering. At that time the war was declared, and I was called back into the service, into the naval service, but at that time there was a request by the War Department for the loan of an officer to design searchlight equipment. At that time my rank in the Navy would have been lieutenant, junior grade. I was transferred to the Army as a first lieutenant. That was in 1917. I was assigned to the Corps of Engineers. I entered the service in Pittsburgh, and was detailed to Washington, D. C. (Tr. p. 331.)

Until they got their arrangements made for the design, my duties in the Engineering Corps were training reserve officers at American University. These particular officers were being trained in the general engineering branches but almost immediately I was called to Washington Barracks to really start the design of searchlight units and the training of personnel to handle it. I did design searchlight units, and did train personnel with reference to the design
158 and construction of the use of searchlights. That continued throughout the war in some measure. The average training period was about six months.

After I went to France, I was on the General Staff, as searchlight officer of the Second Army. I commanded the 56th Engineers at the same time. I did have occasion to go into the design of telephone or geophone for the United States Army. In addition to the searchlight service we performed, we also had attached to us what is known as sound ranging battalions. (Tr. p. 332.) The duty of those battalions was to detect mining operations by the enemy and to install countermining operations and that was done by means of geophones, which are very sensitive telephones. I designed those geophones. These geophones and switchboards which I designed were used by the United States Army during the War. I was in France from September, 1918, until June, 1919, and my duties continued as an Army Engineer while I was there. I returned to this country in 1919 and was at Camp Humphreys, Virginia, as a member of General Blyford's staff, and after that detail he gave me as additional duty the assistant commander of the Engineering School. I was decorated for my services in the War. I had a Croix de Guerre. (Tr. p. 333.) I was given the Croix de Guerre by the French Government.

I have no other decorations of that nature. The insignia which I wear is a Military Order of the World War. That is an organization of World War officers. It is not, in a sense, a decoration. I was attached to General Blyford's staff in July, 1919, until about December, 1919, and

159 then I went to the Ordnance Department, in charge of the tank, tractor and trailer division, and was stationed here, on B Street, in Washington. There, I had charge of the design of all of the trailer equipment which consisted of machine shops, electrical repair shops, et cetera, that is, portable shops. We were working on radio tanks. I did have something to do with the radio use of tanks, and had to do with the design of radio equipment. (Tr. p. 334.)

My duties in connection with the design of this radio equipment actually were general supervision, but it just happened to be a hobby of mine, so I had my finger in it throughout much of the time. That required special knowledge of electrical engineering. When I resigned from the United States Army, I had the rank of Major, Corps of Engineers. I was the assistant commandant of the Engineering School at Fort Humphreys, Virginia, which is, of course, the graduate school for the cadets from the Academy at West Point. That was during this period of service from June, 1919, until December of 1919. My duties in reference to that were similar to the dean of a civil college, in that I selected the instructors and had a lot to do with the selection of the courses and material for the courses, and the assigning of officers to these courses as they progressed. (Tr. p. 335.) There were courses in electrical, mechanical and civil engineering. I resigned from the Army in December, 1919, and went to the Ordnance Department, in a civil capacity. I was chief of tank, tractor and trailer division, for about eight months, until Congress cut off the appro-
160 priation. I then went to North Carolina as a member of the Highway Commission of that State, and my office was at Raleigh. I went there as a vocation engineer and was finally a resident engineer. I was there, I should say, about eighteen months, and from there I went to the employment of one of the Commissioners. (Tr. p. 336.)

That was Mr. John Sprunt Hill, in the capacity of technical adviser. Mr. Hill was a capitalist and controlled some thirty million dollars, and he had various properties throughout that part of the country, and it was my duty to advise him on whether his management was efficient, to aid in the management of managerial policy, and as he bought and sold properties I appraised them for his benefit. He did own telephone companies. He owned the telephone company of Mebane, in North Carolina. There were a number of those little country telephones. I do not remember the names of them. I had duties to perform in connection with those telephone companies. I had a number of duties. Most of these telephone companies had personnel that was not any too well trained, and there were times when I was called to go up and put them right on installations and things of that sort. My work had to do with insulation, as well as installation. (Tr. p. 337.)

I was with Mr. Hill from 1921 until the last day of 1926, in that employment. After that I was made superintendent of Watts Hospital, at Durham, North Carolina, by Mr. Hill. In a sense, he owns Watts Hospital, but technically, no. He had quite a financial interest in it, in that it 161 had been left by his father-in-law. He inherited the hospital. I was general superintendent of the hospital. I had things to do at the Watts Hospital which required a peculiar knowledge of electrical engineering. I did quite a lot. I had, of course, all the electrical equipment in the hospital which included some very fine equipment, X-rays, and what-not. That was under my control and supervision. The hospital under my jurisdiction was increased in size about 110 per cent during my tour of office, and that naturally meant that I was to increase the operating room facilities and the X-ray facilities and so on, and so, entirely new X-ray equipment was installed. (Tr. p. 338.)

That was under my supervision. Of course, the telephone equipment belonged to the local company, but we did quite an extensive telephone system installation. I had all to do with the lay-out, that is, the selection of locations of instruments and that sort of thing. I was there at the Watts Hospital as superintendent until January, 1930. I resigned from that position and opened offices as a consulting engineer in Durham, North Carolina. My office at Durham, North Carolina, was open about nine months. Personally, I was there very little because I had something of a reputation in the hospital field and I was called on to reorganize other hospitals. (Tr. p. 339.)

That was in Georgia, North Carolina and Virginia. I reorganized the Winchester Memorial, about 75 miles from Washington, among others.

My duties there were similar. I closed my office
162 at the end of nine months, and was called to Grace
Hospital at New Haven, Connecticut, as general superintendent. At Grace Hospital, I had the same duties there as I had at Watts. They were in the throes of a building program. They were also financially embarrassed, so that I had to go through practically the same procedure there that I did at Watts—the general reorganization and the general building program. I was there at Grace Hospital approximately two years. Since that time I have done quite a lot of work. I left there and opened a consulting office again in Atlanta, Georgia. I was down there about a year during the depth of the depression. (Tr. pp. 340, 341.)

I came back to Washington here and was sent to Tennessee as director of relief and chief engineer of the Tennessee Relief Administration, employed by the Federal Emergency Relief Administration, as chief engineer and administrator. As chief engineer, I was charged with all of the construction and all that went on in that organization. I went down there December 10, 1933, and I came back to Washington in March, 1935. I was chief engineer all of that time. I was then transferred to the Resettlement Administration and organized that at the beginning. I was Senior Regional Engineer. (Tr. p. 341.) As Senior Regional Engineer, I had charge of the construction, the process of construction, in an area of thirteen States. I was there about nine months when I was transferred to the Public Works Administration. My work in that position was the passing
on the special equipment primarily and heading the
163 section on land. It was special equipment of every
kind. I specialized in hospital equipment, electrical equipment and things out of the ordinary. My title was Section Chief of the Engineering Division. I had to have electrical engineering in that position. All the electrical equipment for hospitalization, and any special equipment which was bought, had to come over my desk. I was there from January, 1936, until December, 1937.

Since December, 1937, I have been on my farm at Hurry, about ten miles from Leonardtown, Maryland. I am having a restoration of an old house, about 260 years old. (Tr. p. 342, 343.) The house is to be entirely electrified. There is nothing in it now.

I am a member of electrical societies, and of the American Society of Civil Engineers. I have been a full member since 1936. It has about 20,000 members. I am a member of the American Society of Professional Engineers, and treasurer of that society. I am past president of the local chapter of that organization. It has about 7,000 members, and I am the national treasurer. (Tr. p. 343.)

I am a member of the Society of Military Engineers, and have been a member of that society for about twenty years. It has a membership of about 15,000.

I recently made an examination of the telephone wiring at the Observatory. I made that at the request of counsel for plaintiff. With reference to the position of the telephone wires in the building, I examined it from the basement to the attic, everywhere there was telephone equipment. I did examine the switchboard, also. I examined the attic.

164 Thereupon witness was handed photographs (Plaintiff's Exhibits 4 to 12, inclusive), and after having examined them, he testified that the position of the wiring in those pictures reasonably represents the position of the telephone wires in the Observatory on the day that I made my examination. I do not remember the day I made the inspection, but it was about six weeks ago. (Tr. p. 366.)

When I made my inspection of the telephone wires in that building, why, the construction of the building itself was peculiar, in that very few roofs are built in that manner. I did make an examination of the roof. It is a metal roof, supported on a metal structure. I did see parts of the metal that are connected to or attached to the roof at points below the roof. They are in the alley or attic hallways. They were the ends of the beams where they had been sawed off to make the attic alleyway high enough to walk in. (Tr. p. 367.)

Describing generally the path or direction of the telephone wires as they are situated in the attic of the Observatory, on the day I made the inspection, well, they entered the attic through an aperture in the attic. That aperture

was made in the basement. The aperture is in the south wall of the hall. From that point they proceed to the ceiling line approximately of the attic. They are clipped at that point and go both ways to various terminals. (Tr. p. 368.) Those lines are close to the ceiling in that areaway in the attic, most of them. I did notice exposed I-beams or
metal beams at points near the wires. There were
165 comparatively many points where those exposed
metal points or I-beams were near the telephone
wires in the attic. (Tr. p. 369.)

When I say "comparatively many", I do not, offhand, remember how many there were. I can identify them.

Thereupon witness was handed photograph (Plaintiff's Exhibit No. 6, and he testified: I can identify exposed I-beams or metal beams on that photograph. Referring to the photograph, witness testified: This is a telephone wire, on Exhibit No. 6. This spot represents the beam and the white represents the telephone wire. I have seen these I-beams; I saw exposed beams. As to how closely the telephone wires were strung to these exposed beams, well, they vary. In some places they are 2 to 3 inches, and in other places, they are 5 to 6 inches. I did notice the type of insulation on these wires. They had the usual braid insulation used for telephone wiring, a No. 20, with a 3/64 inch rubber insulation with a cotton braid superimposed thereon. (Tr. p. 371.)

Electricity is a dangerous instrument unless it is properly controlled. 24 volts such as that used by telephone companies generally is dangerous under certain conditions. The certain conditions would be a person having a cardiac condition, it would be dangerous. I mean a fellow having heart trouble would be shocked by 24 volts where an ordinary man would not. (Tr. p. 374.)

There are known or approved devices or appliances which will prevent excessive current of lightning from entering
telephone lines, that were not used out at the Naval
166 Observatory for the telephone lines or equipment as
I saw them recently when I made my inspection, assuming it was in the same condition as it was on June 6, 1934. The known or approved appliances or devices that were not used by the telephone company, back in 1934, were protector blocks—the lack of protector blocks. A pro-

tector block is a porcelain block on which is mounted two fuses, and a series of carbon blocks so designed as to lead foreign current off the line. These protector blocks are very usually placed at the entrance to the building where there are outside lines. As to whether I am speaking of overhead or underground lines, I said: Overhead lines. I was asked the question where they are usually placed. My answer is based on conditions there, either overhead or underground, either one or the other, adequate protection.

My answer was based on the assumption that this was an underground line coming into the Observatory. (Tr. pp. 376, 377.)

I do not mean to say that this protector block must be put on a cable line. As to where this protector block should be used in the Naval Observatory under the conditions which existed there in 1934, my answer is that to protect the subscriber or the user of the branch station, it should be placed close to the desk stand. When I speak of the branch station, I refer to the desk stand. I did not find any protector block at the Observatory.

As to what other known or approved devices I failed to find, my answer is that where wires pass metal bodies, or anything that might contact electricity, they should
167 be further protected by porcelain tube insulators.
A porcelain tube insulator is a tube made of porcelain through which a wire may be passed, where it passes through to be used in connection with insulated wires.

As to what is the efficiency or resistancy of porcelain, as compared to the insulation that appears on this telephone wire on this exhibit telephone in this courtroom, well, something in the nature of a thousand to one. (Tr. p. 377.)

Explaining what I mean by that, this particular telephone wire is insulated against probably 75 to 100 volts, whereas a porcelain tube over that would increase the insulation so it would take somewhere near a thousand volts. You could use the porcelain; it is a tube. You could run the telephone wire through the tube where the wires go along the wall. I am not speaking about wiring in this particular tube now but I testified that there were exposed steel beams and metal beams; those metal beams are conductors of electricity. These telephone wires are in close proximity to these beams; they vary from 2 to 5 inches.

(Tr. pp. 378, 379.) Where they were at a distance of 2 inches from these exposed beams, in my opinion, the telephone company did not use the proper insulation along these exposed beams. The type of insulation the telephone company used was simply the regular twisted pair. The twisted pair of wires carried approximately 3/64 of an inch of rubber insulation and, outside of that, a cotton braid insulation. That will insulate against approximately 250 to 300 volts. In my opinion I do not think that was sufficient insulation under the conditions which existed. In
168 order to properly insulate the telephone wires along those beams, I would have placed porcelain tubes over the wires at those points. And the porcelain tubing is a thousand to one more than the ordinary insulation that they have. (Tr. pp. 378, 379.)

As to whether there are other known or approved appliances or devices that I failed to find or that were not there, my answer is that there are several devices for protection against lightning that the telephone company just does not use. As to what territory I mean, my answer is anywhere. Those other devices are choke coils. A choke coil is a helix of wire which will retard the progress of lightning along the line. As to whether I am now speaking about overhead wiring, outside, I am speaking about any wiring on which lightning may enter. Lightning does get underground. It does not necessarily have to go through something overhead in order to get in there. (Tr. p. 380.)

When I speak about a coil, I mean a helix or choke coil.

At this point, the witness went to the blackboard, made a sketch of a helix or choke coil thereon and in explaining the coil testified: Any coil or helix in electrical work, the thing is an open coil which is wound in that manner (illustrating). Looking at the coil setting up on the ground, it would have that appearance. That is, a coil would stand open. It does look very much like the coil in a bedspring. The effect of the coil is this, that the lightning or any high tension current above certain voltages has a tendency to follow a straight line, so that if we bend the high
169 tension wire and it is in this position, it will travel straight to it rather than making the jump. So, to simply choke down the voltage of electric energy, we put a coil and hem it up. They did not have any choke or helix coils out at the Naval Observatory.

As to what other known or approved appliances were not used at the Naval Observatory, well, the system is not thoroughly grounded. (Tr. p. 381.) I mean the telephone system. As to whether I made an examination to determine if the telephone system was thoroughly grounded, I did not make an examination by the Wheatstone method, because I had none available. I made a visual examination. The telephone system at the Observatory is not properly grounded in that it has no protective device which would allow the lightning or other injurious current to travel to ground without coming back through the exchange again. The Naval Observatory building is not purposely grounded. Incidentally it is grounded. By "incidentally", I mean that the building is a masonry wall construction, known as bearing walls. The roof is a metal roof on a substructure superimposed on that masonry structure. So that, there is no physical ground, as we know ground. That is, the roof itself being metal, it should be in connection with the ground. There is no such ground. Therefore, the roof itself is a separate entity electrically from the building. The building is incidentally grounded by certain pipes and leaders, water leaders and things of that sort, which come in contact with the roof incidentally. (Tr. p. 382.) The masonry work, itself, is an incidental ground.

170 As to whether there are other known or approved appliances which were not used in the telephone system, why. I think that about covers the lack—the insulation, of course, as I stated, could have been much better. The insulation in the pipe walls themselves could have been better. That is, the tunnels and the ducts and what-not through which these wires pass. Insulation which I found existing was only the ordinary insulation which is carried by the wire, and by that, I mean 3/64 of an inch rubber and this braid on the exterior.

As to how these wires should have been insulated which pass through the ducts, speaking of the tunnel ducts, I am speaking of the tunnel carrying the steam pipes, and I say in any instance where electric conductors come in contact with the various objects which are themselves conductors, it is sound practice to provide additional insulation against these things. In this event no additional insulation was provided, except in some few isolated sections. In my opinion the type of insulation which should have been used is loom, circular loom. (Tr. pp. 383, 384.)

In describing circular loom, it is an insulation built up of a fibre, various types of fibre, by different manufacturers of loom, which is impregnated with asphalt and other insulating bodies. Other companies do make loom. The telephone people use it. It is used by the American Telephone and Telegraph Company and all of its subsidiaries. The Chesapeake and Potomac Telephone Company of the District of Columbia is a subsidiary of the A. T. & T. Company, and they did not use it in this case. At the
171 moment, I do not think of any other known or approved appliances that in my opinion should have been used and were not used on the telephone lines existing at the Naval Observatory. (Tr. p. 385.)

Thereupon, the following occurred:

"Q. In your opinion, should an examination and inspection of the building have been made by the Telephone Company before installation of any telephone equipment?"

To which question counsel for the defendant objected and said objection was sustained by the Court, to which ruling of the Court counsel for plaintiff then and there excepted, which exception was duly noted. (Tr. pp. 385, 386.)

I have been sitting in the courtroom throughout the entire trial of the case. I have heard all of the testimony. I have heard a description of this blue flame, by Dr. Robertson, and Mr. Dickey, and this colored boy, Fraction. I can say, from my experience, whether or not that was an electric display or what kind of a display it was. My answer is that, from the description, I would say it was static electricity. As to how static electricity differs from ordinary electricity, my answer is that static electricity is the electricity which is contained, say for instance, in a condenser. That it, is is held impotent on two plates until certain conditions arise through which a path is formed, but it may break down. Lightning electricity is a form of static, and X-ray is also. It is different from the generated electricity. It creates a spark, a gap between the Captain's ear and the receiver. I have heard the testimony about this switchboard. I heard the testimony of light flashing up,
172 this noise which resembled the tearing of canvas and the rattling noise and the lighting up of these

additional lamps. (Tr. pp. 389, 390.) In my opinion the switchboard was caused to act in that manner by a foreign current of some sort introduced into the system at the moment, and the noise was due to the relays closing.

"By the Court:

"Q. You have heard this testimony where it is stated that hardly any appreciable difference when the Captain experienced that thing; there was a loud clap of thunder—lightning followed by this thunder. Do you associate that unusual occurrence with that lightning? A. It is quite possible, your Honor.

"Q. You do not know of any other reason for it, do you? A. No, sir.

"Q. No matter how much insulated that would happen just the same? A. No, your Honor; it would not.

"Q. Do you mean to tell me that the telephone people have been able to find some system whereby they could protect the telephone users? I mean, from lightning? A. Ninety-nine per cent of the time they can.

"Q. And they do not use it? A. They use it in an exchange. Very seldom do you hear of lightning getting into an exchange.

"Q. And is it practical to use it at other places? A. Yes.

"Q. Lightning is an act of God? A. Yes." (Tr. p. 390.)

Lightning does not necessarily leave evidence of
173 burn after it has contacted with some object. In
probably 50 per cent of the cases it does, and in the
other 50 per cent it does not leave evidence of burns.

There are many causes that will produce or cause a foreign current to enter telephone lines. Some of them are contact with a power line, accidental contact with a power line; contact of telephone lines with power lines; static electricity in the form of lightning or the corona effect adjacent to high power lines. A corona is an inducted current set up around a high tension line carrying alternating current. As to whether I mean by that that there is a current that hovers outside of the high tension line, my answer is that all wires or conductors having current have an outside field, as it is known, in which there is an evidence of potential. That is visible to the human eye only in certain instances, especially at night, around the specially high tension lines, a hundred thousand volts or over. That is visible in the form of a bluish light that follows the conductors. That in general covers it. There are many ways in which that contact may be made. (Tr. p. 393.) Some of the ways in which that contact can be made is, for instance, a high tension line coming in contact with a secondary side of a transformer will reverse that transformer and build up in the primary line an induced voltage much higher.

The difference between a primary line and a secondary line is that the primary line is a higher tension line coming
into the transformer, where it is reduced to useable
174 potential. As to whether the transformer acts as
a reducer, the transformer may act in either way.
It depends on how it is hooked up. The purpose of the transformer is, in effect, to act as a rectifier. It rectifies the current from one voltage to another. That is to say, if it comes in in a high voltage and we want to use it in a house, we do not want to use a high tension. (Tr. p. 394.)

Describing the various ways and means lightning can enter telephone wires, lightning may enter a telephone wire by either a direct contact or it may enter it by an induction. As to how it would enter by induction, well, for instance, it hits a conductor of some sort, such as a metallic roof, and it would build up around that roof a field as it would in a condenser. The roof would act as one side of a condenser and when the potential of one side of the condenser is built up to a certain point it will break down and anything in that path would have an induced current within the conductor; so that the telephone wire in that field would carry an induced current. (Tr. p. 395.)

"By the Court:

"Q. May I ask notwithstanding, how they were properly insulated, even if they were insulated with the insulation in that porcelain thing, does not the same result follow which you have mentioned if it was located in the manner you say and if it hit the roof? "A. If the porcelain was adjacent to the points of contact, the possibility would be
very remote that it would enter the telephone line.
175 "Q. But there still remains the possibility that it
could enter under those circumstances? "A. Your
Honor, I can not answer positively under all conditions.

"Q. Under ordinary conditions, is that true? "A. That is true.

"Q. Electric science has not progressed to that extent, that you control it? "A. We can control it.

"The Court: If you could control it, it would not have the effect you are speaking of.

"Mr. Bettelman: You can control lightning?

"Mr. Hoover: Let him tell how it can be controlled.

"By Mr. Bettelman:

"Q. How can it be controlled? "A. It can be controlled by numerous devices which we use.

"Q. What are some of those devices? "A. Proper insulation and proper grounding of the system which we are trying to protect, and those devices are in use in the various systems in which they are introduced.

"Q. Are they introduced in any telephone system?

"Mr. Hoover: I object to that. We are talking about a telephone system which we have here. He tells us about the various devices and he said that is all he knew about it.

"By the Court:

"Q. What was this thing—what do you call it? "A. A helix or choke coil.

176 "Mr. Hoover: He gave three instances, the helix, the protected block and the loom, and he said that was all he knew.

"The Witness: No. I think, if I made that statement, I did not intend to mean that is all I knew.

"Mr. Hoover: You were asked the question if you knew of any others and you said, after studying quite a while, 'No'.

"The Witness: I meant by that that the arresters covered that field. There are different kinds of arresters.

"Mr. Hoover: Very well. I will cross examine you in a little while." (Tr. pp. 396, 397.)

Witness, resuming, testified: I know of other telephone companies in the United States that use known or approved appliances that were not used at the Naval Observatory, under conditions exactly as they are here. The names of some of those companies are: The Southern Bell, with headquarters at Atlanta; the other is the Central Union;

that covers the Middle Western States; the Pacific, which covers the Pacific States, the Cumberland, which covers the Southern States; I would say generally all their subsidiaries. (Tr. pp. 397, 398.)

As to whether they have what these people do not have, these people have them. These people have them too but not in that particular insulation. The Chesapeake and Potomac have them, also, but they did not have them in the particular insulation. I mean to say that other companies do have them, in certain instances, in situations similar to this. (Tr. p. 399.)

177 Thereupon, on cross-examination, witness further testified: My occupation at the moment is that I am doing over a house for myself. That is engineering work. I am restoring a house which is 260 years old. That is restoration. (Tr. p. 399.) A restoration is a reproduction of a house as it existed at a certain time. I am doing just that. I am going into the research of what that house looked like when Lord Baltimore built it. It has everything to do with engineering, civil, mechanical and electrical. There was no electrical engineering at the time Lord Baltimore built that house, but I am putting in the electrical features so that the house can be used in modern ways. That is a part of the restoration. I am working for myself.

The last job I had was with the Public Works Administration as section chief. I had charge of all of the purchases of land in the United States and of the purchases of special equipment. (Tr. p. 400.) I was in the Public Works Administration, under the Interior Department, located in Washington. I did not purchase any lands but had charge of determining whether the Government would buy land for building of various projects. The projects covered the whole range, from jails, courthouses, department buildings, power plants, throughout the entire range. I was engaged in that kind of work possibly for two years, and before that I was regional engineer for the Resettlement Administration. There, I had charge of the work they did in thirteen States. The primary function was to produce housing, but in housing it carried with it all the phases of engineering. (Tr. pp. 401, 402.) That was like the
178 scheme of Mr. Tugwell to build these houses in Tug-

welltown. My job was the supervision of that phase of it in the thirteen States, in the construction of the houses. I was there about nine months.

Before that, I was chief engineer and administrator of the Federal Relief Administration in Tennessee. That also covered the entire field of engineering. My work was supervisory, supervising the design and construction of these projects put up by the Government by money allotted by the Government, school buildings and courthouses. I was down there about fifteen months. (Tr. p. 402.)

I told you that I was at one time employed by the American Telephone and Telegraph Company, on two different occasions. The first occasion was in 1909 and covered a period of two or two and one-half years. That work was continuous. During that time I went there as material man, handling material in the storehouses, and in the field, for building lines and exchanges. The American Telephone and Telegraph Company built their part of the exchanges, the toll lines coming into the main frame. The exchange, itself, was under the local companies. (Tr. p. 402.) I did not build total exchanges for the American Company. I handled material for the sleet break, and then went into the plant as an equipment engineer. I gave that material more or less on requisition. The American Telephone and Telegraph Company is known as a Long Lines Company. The materials were furnished for the wires and cables on the poles. I was also the equipment engineer inside the plant at the Atlanta office. (Tr. p. 404.)

179 I was located at the Southern Bell Building, on Pryor Street, in Atlanta, and that is where the Long Lines came in. I did not have anything to do with the installation of equipment in houses. The American Company had nothing to do with that.

I next worked for the American Company in general installation field throughout the United States as assistant equipment foreman, with headquarters in New York. That must have been in 1911, or somewhere along in there. I was assistant equipment foreman and my duties were the installation of long lines of equipment, telephone equipment, and all that goes with it throughout the United States. It was not aerial lines. I had nothing to do with the lines. I had to do with the inside equipment, telegraph lines, multi-

plex and duplex equipment. That is the equipment which they used which was installed in the local exchanges in the various parts of the country—everything beyond the main frame. That meant, in a sense, hooking up the equipment. During that period, I never personally installed a subscriber's set, in my life. I have had to do with wiring of equipment in a building for subscribers, in brokers' offices in Atlanta, Memphis and New Orleans. I do not remember the names. (Tr. p. 406.) I was working for the American Company. When I worked for them, they certainly had brokers' services. I mean brokerage offices, but not always the ticker system. It was not a telephone such as we have, not this kind of a telephone. It is not a subscriber's set, but it is telephonic. All telephones, with
the exception of the identical equipment, are iden-
180 tical as to its operation, that is, the means of tele-
phoning. The transmission of sound by wave, is
identical.

As to the kind of work, from the time I started I suppose I did everything. I charged storage batteries; I installed equipment, actually got on tables and put it on there, and all that work with it. I finally graduated to a supervisory position. (Tr. p. 407.)

I remained in that work about a year. I then went to the Western Electric and designed telephone and telegraph equipment. I was a designing engineer and designed anything that came across the desk, telephone equipment or telegraph, as the case might be. I designed the equipment, itself, relays, repeaters, coils, and I suppose they were built according to my designs. I only saw the samples. I was there about a year. (Tr. p. 408.)

My next connection with the telephone work was with the Western Union Telegraph Company, as Division Equipment Engineer. I had charge of the installation of all telephone and telegraph equipment that they used in their offices. I was there altogether about three years, up to the time I went into the service in 1917. Since 1917 I have had no direct employment by a telephone or telegraph company, but I have been in a position to observe and keep up with the telephone trend, since that time. I have had no work with a telephone company since 1917. I was called into this case by a Mr. Bettelman. (Tr. p. 409.)

I went out to the Naval Observatory to make an inspection about six weeks ago. I did make an inspection of the cables and the wires in the Naval Observatory. The
181 cables get into the Naval Observatory from underground, so far as I could determine. I did ascertain how they got there. I was shown by the electrician at the Naval Observatory where the cables came into the building in which Captain Hellweg had his office. I did trace the cables from that point. I did not trace the cables outside. I do not know how they came from the manhole or conduit lines over in Massachusetts Avenue. I do not know how they got to the building, the Observatory building, except that they came underground. (Tr. pp. 410, 411.) When they came underground into the building, I do not know how to describe at what point they came in. They came in, in the basement. I saw where they came in. I was able to identify the telephone cable coming into the Naval Observatory building. I was able to identify it because of my knowledge of telephone cables. As to where they came into the Naval Observatory building, well, I can not locate that for you verbally. I saw the part of the basement that they came in through. (Tr. p. 411.)

I knew it was a telephone cable simply because it followed the system all the way through. The place where I saw it enter the Observatory building was in the basement. I do not know the name of the location and what part of the basement. It came from the outside, it came through the duct. It was a terra cotta duct with some six or eight cells, or it might have been a fibre duct with one cell. Actually, I did not pay any attention to the duct, the material of the duct. I saw the duct. I was not interested in the duct. (Tr. p. 412.)

182 I was interested in tracing the cable. I only traced the one cable. As far as I know, there was only one telephone cable there. I am not sure that there was only one there. I know it was a cable of the telephone company, for the reason that that was the cable that all the leads came off, the switchboard and box. The leads came from the cable to the various terminals in the telephone system. As to what points the leads did come from the cable, I would have to qualify that. I say that the leads came off from the cable. It was at the junction box in the

basement that the leads came off the cable. I should say the cable box is probably 10 or 15 feet from the place where the cables entered the building. (Tr. p. 413.) I say that the leads came off at the junction box in the basement. That is where they terminate. I told you that the leads came off the cable at the junction box, that is the leads that you are speaking of, the terminals. I testified that these leads came off this cable at the junction box, and by the "leads", I mean a pair of wires. (Tr. pp. 414, 415.)

As to how many pairs of wires did I see come off the cable at the junction box, why, I did not count them. I suppose there were some three or four, or probably more. Some three or four pairs of wires came off the cable at the junction box. I do not remember how many pairs there were in this cable box which I saw. It was probably a ten-pair cable. According to my knowledge of telephone equipment, it is a fact that it requires a pair of wires to serve each telephone in the building. I do not know how many telephones there were in that building, on June 6, 1934.
183 I haven't the slightest idea. I did not examine to see. I did not count the stations. There has to be a pair of wires for each station, or each set, and I said I did not know how many pairs there were, but I think approximately ten pairs in the cable. (Tr. pp. 415, 416.)

As to whether I was making an examination of this equipment in there, may I qualify that statement, the one I am about to make; I was asked to view the insulation. I made an examination to determine if possible what might have caused this accident. I examined the installation purely from an insulation standpoint. I did not count the stations, nor did I count the pairs in the cable. Your question to me would indicate that you think that I thought that there was only one cable there. I did not say that. (Tr. p. 416.) I said that I traced this cable from the place where it came into the Observatory building to this terminal box in the basement. I did do that. And I knew that was the cable of the telephone company. There were no leads off of that cable before it got to the junction box. I am positive of that. At the junction box, I saw this cable terminal, I said, I presume this cable was a ten-pair cable. I did not make enough of an examination to determine whether there were ten pairs, or how many pairs. I did trace the cable itself along the line until it got to the junction box. (Tr. p. 417.)

The cable was hung by the regular cable hangers. It was hung on the wall, on the side of the wall up near the ceiling, I should say, probably two feet or more 184 from the ceiling. It was fastened to the wall at points, and then it lay along there without any lead being taken off of the cable until it got to the junction box. At the junction box there are what are known as terminals, and these pairs came out and were fastened into the junction box—what is known as a terminal strip. (Tr. p. 418.) From there they went to the switchboard, and I am as sure of that as I am of anything. I did trace it to see. These wires on these lugs or terminals are crossed in there between the two strips.

I know what a splice is. It is soldered over with lead where the splice is made. I do not recall seeing anything of that kind before you get to the junction box.

As to whether I made enough of an examination to see, as I told you, I was not interested in what came off the cables. I was interested in the insulation. I was interested in whether or not it was grounded. (Tr. p. 419.) I told you that this cable system was not properly grounded, speaking of the whole system and not of an individual part. I did examine this cable from the point where it came into the Observatory to the point where it went to the junction box, to see whether or not there were any grounds on it. A ground is made by grounding it to the sheath. A sheath is a lead covering, the lead covering on the cable. It is grounded by wrapping a conductor around it and carrying it to the ground. It is usually carried to the ground by grounding it to a water pipe, or a steam pipe, or driving a rod in the ground. I did not examine this cable, from the place where it came into the Observatory to the place where it went into the junction box, to 185 see whether it was grounded to any of the water pipes in this building. I do not know whether it was grounded or not. I was not interested in that because the cable is probably grounded anyway. (Tr. pp. 420, 421.)

The cable is grounded outside when it is in the ducts and presumably it was grounded outside, at every point until it entered the building. We presume that when you put a cable in a duct in the ground, it is grounded, but I do not know that it is grounded.

As to whether I have seen one that I found out was not grounded, I have seen a wheatstone—that was an unusual condition. Running cables in the duct in the ground is the method which is in common and general use for general work. I did not examine this cable running from the place where it entered the Observatory to the junction box in the basement, to see whether that cable was grounded. (Tr. pp. 421, 422.) I did notice, at a point, a metal clamp. In making the ground, you take a metal clamp and secure that clamp tight around the cable. That is lead covered, and then you take the other end of the wire to your clamp, that clamp around a water pipe.

As to whether I saw any such grounding as that, it probably was there; as I say, I was not interested in the grounding of the sheath of the cable, because it would be grounded anyway, presumably. I do not mean to say that this cable system was not properly grounded in the building. Whatever I have said about the grounding relates to the twisted wire rather than the cable. It is a fact that in order to serve, say, 23 stations in the Naval Observatory
186 building, that you had to take off 23 pairs of wires from the main cable that came into the building.

As to whether I did notice, at any point in the basement, where there was a splice on the main cable, where pairs of wires were spliced to the wires in that cable, a small cable came from the main cable, my answer is, I do not recall whether there was a wire splice on that cable or not, in the basement, because as I say I was not particularly interested in the cable. Unless they had a house cable in there, it would not have been.

As to whether all of the pairs of wires that were taken off the main cable in the name of the Naval Observatory building up to this box in the attic, I would have to qualify that. The main cable would only carry trunks, and I can see no reason why they would have a wire splice in it. The trunks go to the switchboard. If there was a house cable in that same duct, that would be something else.

But, let me explain myself, if I may. The trunks go into the switchboard, itself, from the inside. From the place in the basement which I call the junction box, the trunks would go to the switchboard. (Tr. p. 423.)

Thereupon, by consent of counsel plaintiff offered in evidence photograph (Plaintiff's Exhibit No. 20). (Pursuant to stipulation of counsel said exhibit is omitted from this bill of exceptions and will be produced in the Court of Appeals at the hearing of this cause.)

Whereupon, the photograph (Plaintiff's Exhibit
187 No. 20) was exhibited to the witness and after having examined it, he testified that he recognizes that as a photograph of the box about which he has been speaking, which is located in the attic of the Naval Observatory.

Thereupon, one of the jurors asked what the figure "4" on the photograph indicated, and by agreement of counsel and approval of the Court it was stated that that indicates the pair of wires which went to Captain Hellweg's station.

Witness, resuming, testified: This photograph (Plaintiff's Exhibit No. 20) shows the terminal box in the attic. At the right side of it, it shows a cable running along the wall which goes down and terminates in the terminal box. Then, on the other side, you see the terminals where these wires are fastened, and they lead off down below the terminal box, go through a ring, and then they go in a bunch and they go up over these pipes, and you notice over the pipes that the wires have a black cover. That black cover is a tape. It is known as friction tape, or insulation tape. This bunch of wires which I see on the left-hand side is the twisted pair. Each one of them is a pair, and each one of these twisted wires contains a pair that goes to each one of these stations that is served by this terminal box in the attic. This cable which terminates in that junction box in the attic goes down the wall and goes down to the switchboard. It goes to the P. B. X. (Tr. pp. 424, 425.) The cable eventually does go to the switchboard. It does go to the switchboard. As to whether it goes direct to the switchboard or goes some other place before it goes to the switchboard, it goes to the switchboard. I do not know
188 what you mean by going to some other place. I did examine the run of this cable to see where it went and how it was constructed. I am telling you what I saw. I examined that plant at that time for insulation rather than installation. I mean by that, if I may qualify that, I was not interested as to where the junction box was and I did not retain that in my memory.

As to whether I told you, on my direct examination, that I examined this plant, and that the cable system and the wiring system was not properly grounded, my answer is that I said "The system". (Tr. p. 426.) I said both. I will stick to the statement. That cable system and the wiring system was not properly grounded. I said I examined the cable system to see if it was grounded, and I said it was not grounded. Talking about the cable system in the house, I still say it was not grounded. I know it was not properly grounded by a physical examination. The physical examination I made to see if there were any grounds on it was I went along the system, from point to point. I went along the system to see if it had proper grounds. The cables came into the Observatory in the basement. And I traced it from the basement to the box. I went along the whole line. (Tr. p. 427.) From the entrance to the box as far as it was physically possible. It was exposed, and on the wall, and I saw it all. I told you I was not interested in the underground side of the cable, because it normally was grounded, whether they grounded it or not. When I told you, not less than three minutes ago, that I examined this whole
189 cable system from the place it came in there, I simply examined that casually, because that is where I started. I went to the cable box in the basement, and I examined it from point to point. The next point I examined it from the cable box in the basement was I went from there to the switchboard. (Tr. p. 428.)

In tracing this cable I went from the junction box in the basement to the switchboard. I was able to trace the cable from the junction box in the basement to the switchboard as far as it was physically possible. I did trace it. I went to the switchboard. As to whether there was any thing up there alongside of the swtichboard, outside of the switchboard proper, I am trying to think whether I can answer it or not. I can not answer that. (Tr. pp. 429, 430.)

When I examined the switchboard, it was located out in the lobby. I know there is a little room off of the lobby. I did not know that the switchboard was in that little room, in June, 1934. I do know where that little room is. I did go in that little room to see if there was any equipment in there. I said it went to the frame or what takes the place of the frame. By the "frame", I mean where the wires

terminate. That little thing that is in the little room away from the switchboard, it takes the place of the frame. I do not know what is the name of it. If I would ask a lineman, he would say it was a frame. (Tr. p. 430.) I would say it is a frame. That is the only name I know. It is known as a long lines cabinet. It would be that. The cable from the basement would go through that cabinet in
190 going to the switchboard. It did go through there
to the switchboard, I was able to trace it there. I went over it, but I was not interested in where that lead went to. I was simply following along. I was not interested in where it went or what it did. I would say it was not grounded but I do not remember just where the junction boxes were located. This cable that came in through that building is grounded in the long lines cabinet, in this little room and possibly did go from there to this junction box in the basement and then go up from the junction box to the switchboard, that is outside in the hall. I do not know whether it did or not. I did not examine it to see. I was not interested. (Tr. pp. 431, 432.)

Speaking of this cable which is shown in this photograph (Plaintiff's Exhibit No. 20), which goes to this terminal in the attic, I do not remember whether or not this cable is spliced off from the main cable coming into the Observatory before you get into the junction box in the basement and is carried across the ceiling of the basement, and then goes into this aperture or flue, or whatever it is, right straight up to the attic. I followed the cable. Taking this one cable that terminates in the attic, I can not say that I saw it come off, because, as I say, I was not interested. If there was a telephone cable in evidence, I followed it. (Tr. pp. 432, 433.) This particular cable that came to this terminal box in the attic, I followed it to where it takes to the ducts, and then of course I had to leave it. I mean the ducts in the attic. It is a sort of a flue, an air shaft, I
191 would think, probably 14 inches wide. In the attic,
I followed it, the cable, from this box across this wall over to the point where it entered this air shaft, and that is all that I did. I traced out the pair of wires in the twisted wire which lead from this junction box in the attic to the Captain's office. In coming from the attic, it dropped down through a series of rings, then back up through the side

wall, through a series of rings, and followed the break of the ceiling in the wall, approximately. (Tr. p. 433.)

Taking this photograph (Plaintiff's Exhibit No. 20), I see these twisted wires coming up to that junction box. They come up in a group above this place (indicating), and there I see that taping or insulation. Some go up to the right, and some to the left. This pair, his pair, went to the left, and then they went over to a flue or shaft and then down; they came out at the ceiling line in his office.

Thereupon there was exhibited to the witness a photograph (Plaintiff's Exhibit No. 13) and he testified: That shows the Captain's room, and I notice over here in the corner what looks like a flue covering, it is a grill. The wire goes up to the molding. Assuming for the purpose of illustration, where I am sitting, the flue would be over in that corner, when near the door of this courtroom, and then it would come along the molding such as we have here in the courtroom, and would go around to this point near where the jury box is, and then come down through the wall, and then would come in through the opening in the floor and, this being the Captain's desk, it would come right over to his desk. That is the line of the wire.
192 (Tr. pp. 434, 435.)

I did go up to the roof of the Observatory.

Thereupon, the witness made a drawing on the blackboard of the roof and its supports, and testified: This represents the roof (indicating on blackboard). The roof has a flat surface and this wall comes right down and forms the corridor which is shown in these pictures. These are what you would term interior walls. This part of the roof is supported by I-beams made up in the usual manner in the form of a truss, so that one beam comes back like this and the truss is through here, of course. These beams to gain headroom, are sawed off at this point instead of going on through as they normally would, and anchored at this point. This part of the roof is supported on a flat I-beam which comes across. On top of this at intervals are lead ventilators or skylights if you want to call them that. That is the inside wall which goes right through the building. (Tr. p. 435.) The same thing is on the other side. I can not answer definitely how many beams there are which rest on these interior walls, but they are about every ten feet. The size of that attic room is about the size of this courtroom. It comes in there along that attic, the corridor. I saw at least eight beams in that section. I do not mean four on each side. It was 20 or 25; I did not count them. I saw the ends of the beams projecting out of the wall. They varied from absolutely flush to probably a half to three-quarters of an inch. They were I-beams.

193 As to how far did this wire to the Captain's desk run from the point where it separated from the main group as shown in Exhibit No. 20, to the point where it went into this flue, I did not actually measure it, but I would say about 20 or 25 feet. Taking the clock on the wall, in the courtroom, as illustrative of the point where these wires separated, I say that the wire went to the left. The distance would be a little further than the distance from the clock to the wall over at the door of the courtroom. That distance, I would say, is probably 17 or 18 feet. In that space, along there, 17 or 18 feet, or whatever it was, where this wire went along, I would say there are three or four beams that came out and rested on the wall. I said the beams were 10 feet apart. As to whether there would be four beams, that would depend on where the wire took off. It went along about 20 feet and then went into that flue. That being the case, as to whether there would not be more than two beams, if they were ten feet apart, my answer is: I did not count them. There must have been three or four beams along that wall. As to whether I told you that the beams were 10 feet apart, I did not measure that. (Tr. pp. 437, 438.)

The roof is presumably made of copper. I did not test it to see. I think it is made of copper. Copper is one of the best known conductors of electricity. When I said that the building was not purposely grounded, I meant that there was no actual ground leading from that roof to the ground. I am sure of that as far as I could determine. I am telling you that I examined it. (Tr. p. 438.) I looked at it, and I found no deliberate ground. By that, I 194 mean it was not purposely put there to ground that roof. That is easily told. If it is soldered to a roof and a ground rod put in, it must be purposely put there. This copper roof does not have gutters at the end of it. It does not have downspouts. I am sure of that. I know as a fact that that roof has thirteen downspouts around the building, and that those downspouts are made of copper, and that the copper is soldered to the roof, itself. I know that the ends of the copper downspouts are led into a wrought iron or cast iron pipe, but that still is not a deliberate ground. What I mean by a "deliberate ground", is that they may have been put in actually for this purpose. (Tr. p. 439.)

If any static current or any kind of current got on that copper roof, some of it would go to ground by these downspouts, but all of it would not. I say, as an expert, that it would not all go to the ground by that path.

As to whether electricity always seeks the easiest path, that depends upon what you mean by electricity. Taking either man-made electricity or God-made electricity, we normally say it does seek the easiest path, but actually it does not. If you are speaking of an electric discharge it does not always do that. The charge is so great that it may jump off to as many as ten feet away when it had a perfectly good ground.

Taking this case, if electricity got on that roof, the natural course for it would be down those downspouts to the ground. This building was not thoroughly grounded. (Tr. p. 440.) It could have had a positive ground on that roof. By a "positive ground", I mean for instance a piece of
lightning rod wire soldered to the roof actually
195 driven into the ground with a ground rod. That would
be a better ground and connected with a wrought
iron pipe. As to whether it would give a better conductor, I might qualify that by saying that it is not recognized by the underwriters as being a ground. I did not say it would not carry off the electricity. I said it would not always do so. It would not have grounded the building so as to have protected it from current getting inside. Current could have gotten inside by several means. It could have gotten in there directly by coming in the roof structure. It naturally would follow the metal roof structure. And that led partially to the downspouts. (Tr. p. 441.)

If there had been a water pipe adjacent to these beam ends, that was a better ground than a downspout, and it would most certainly have jumped. I mean to say that the water pipe most certainly would have been a better ground if it was in contact with the roof. As to whether there were water pipes in contact with the roof, I do not remember seeing anything of that kind.

As to whether I did not testify yesterday that there were water pipes and leaders in contact with the roof, I said, "Adjacent to the roof." They may have been partially in contact with it. As to whether they were or were not in contact with the roof, that would be saying something I do not know, because I did not slip a gauge in between, to see.

As to whether they were in contact, or not, presumably they were. I can not say whether they were, or were
196 not in contact with the roof. (Tr. p. 442). They were, to all intents and purposes, in contact with the roof. When I say they were in contact with the roof, I wanted the jury to understand that they were in contact, but you said actually. There is a great deal of difference between contact and "actually". There is a great deal of difference. There might be a space there only one-ten-thousandths of an inch. When I talk about contacts, I mean they were in contact. They were in contact to all intents and purposes. (Tr. p. 443.)

These water pipes and leaders, as I call them, were in contact with the roof. I testified yesterday that these wires, or the pair of wires, which led to Captain Hellweg's office, were at a distance from 2 to 5 inches away from the I-beams, from the ends of the beams, that is, from the I-beams themselves, or any part of the I-beams. (Tr. p. 443.)

Thereupon the witness was handed the photographs, (Plaintiff's Exhibits 4 to 12, inclusive), and was asked to trace out this line of the wire from the place where it comes out of the junction box and goes up to the ceiling from that point over to the place where it goes into the flue, and tell how many of these I-beams it passes, as shown by those photographs, and then to indicate the number of the photograph on which it is shown passing the I-beams. And after having examined the photographs, witness answered: On Plaintiff's Exhibit No. 6, it is shown at this point (indicating). And witness marked on the photograph the point indicated. That is one I-beam. And, continuing, he testified: And then it crosses over the one on the photo-
197 graph, Exhibit No. 8. Exhibit No. 8 shows what is

termed as the clock terminal, near the I-beam, but the wire itself is away from the I-beam, that is, the telephone wire; the telephone wire is about, I would say, probably six inches. I am not positive whether that is an I-beam, or not. I think that is probably masonry. I think it is probably masonry and not an I-beam. (Tr. pp. 446, 447.)

The I-beam shown on photograph Exhibit No. 12 is identical with the I-beam shown on Exhibit No. 6. It is the same I-beam shown on both pictures.

That seems to be all that I can identify. I can only identify these two pictures, No. 6 and No. 12, which show the same I-beam, which is one I-beam, and then the other picture, which I have identified as picture No. 7, which shows an I-beam with the clock terminal near the I-beam, and the telephone wire is about six inches away from the I-beam. That is right. I haven't the slightest idea who put these white marks on the photographs. Evidently somebody painted these beams white so as to show up in photograph. I am told that Mr. Gingras did that. Mr. Gingras is the man who painted these I-beams white, so as to show up in these photographs.

Witness, resuming, testified: This photograph, No. 6, shows the I-beam with the wire coming down the wall and I notice this wire has a white marking on it, along where it runs along the wall and where it comes down the wall. I do not know of my own knowledge who made that white marking on that wire. I notice it where this wire
198 passes the pipes. I was told Mr. Gingras made the white marking. I said yesterday that I was familiar with the specifications which required insulation where a wire passes metal pieces. (Tr. p. 448.) Those were the specifications of the American Telephone and Telegraph Company.

Thereupon, there was handed to witness a pamphlet marked "American Telephone and Telegraph Company Specifications, 3853, March 1, 1917", and after examining it the witness testified: That is the specification to which I had reference. That specification, or one similar to it, was in effect at the time I was engaged in the telephone work.

Thereupon, the attention of the witness was called to Section 21 on page 27 of the pamphlet, which reads:

"Crossing or parallelling other wires or metallic objects", and on the left side it reads: "Gas pipes, electric light conduit, metalwork, electrical bell or other signalling wires, or telephone wires not connected to same protector. Wire withing one-half inch apply one layer of rubber tape and one layer of friction tape on woven conduit to inside wire, except where inside wire is in conduit, molding, or shaft."

And witness testified: That is the specification which applies to the condition that we have here where these twisted wires pass I-beams; that is their specification. That specification provides for this additional taping or insulating in case it is within one-half inch of the other metal. (Tr. pp. 449, 450.)

199 The attention of witness was called to his testimony in which he testified that these specifications require that porcelain tubes be used under such conditions as existed here, namely, with these twisted wires from 2 to 5 inches away from these metal pieces or the iron beams, and he was asked if he could find that there in these specifications, and he answered: I do not think I testified that these specifications required them to be from 2 to 5 inches. Porcelain tubes were used by the telephone company. I did testify that these twisted wires, or these wires which went to the Captain's office, that is, the Captain's desk, I found them to be from 2 to 5 inches, away ~~apart~~ from the I-beam. I don't think that I even testified that, according to the specifications of the A. T. & T. they should have been insulated by applying procelain tubing. I said they should have. By that, I mean that is my private opinion as an individual. (Tr. p. 450.)

I have looked at the specifications of the A. T. & T. which were handed to counsel for plaintiff, but I don't know who wrote it. I had one when I worked for the telephone company and it was similar to this one. As to whether I find anything in here that requires the use of porcelain tubing under conditions such as I found in this Observatory building, with the twisted wires from 2 to 5 inches from the I-beam, in the attic, my answer is, only where it crosses pipes or is adjacent to pipes.

As to whether I find any specification in there which requires the use of porcelain tubing under conditions such as we have here, namely, that this twisted wire ran from 2 to

5 inches in the attic, my answer is, no, not to the I-beam. (Tr. pp. 451, 452.)

200 These telephone wires from the attic to the basement are in a lead-covered cable.

Thereupon, witness was shown photograph (Plaintiff's Exhibit No. 20), which shows the cable going from the junction box running along the wall over to the shaft, and down to the basement, and he testified: That is the lead covering. Where it ran from the attic to the station in the Captain's room, it is generally known as twisted wire, and I said it was No. 20 and had a 3/64 rubber insulation. The wires which are in the cable, some have paper, and some cotton insulation. And where you have a twisted wire covered with braid, such as the wire in the attic, it has rubber insulation in order to make it partially impervious to water. (Tr. p. 452.) It is not principally for that purpose but it operates to help avoid mechanical injury. It insulates it in the first place and then it protects it from contact with outside objects or from water.

I said that the telephone company used 24 volts in the operation of its system, 24 volts on the talking system, and used 60 volts on the ringing system. I spoke of the fact about 24 volts might be dangerous to a person who had some cardiac or heart trouble. It would hardly be dangerous to a person in that condition unless he was in some condition such as standing in water and making himself a better conductor; there would have to be exceptional conditions. He just might get a shock. I spoke about this protector block which has fuses. In connection with this protector block, you also use a ground.

201 Thereupon there was handed to the witness a specimen of protector block and, after examining it, he testified: That is the thing I have been talking about. That is the protector block. (Pursuant to stipulation of counsel the specimen of protector block will be introduced in the Court of Appeals at the hearing of this cause.) (Tr. p. 453.)

Referring to the specimen protector block, these two cylinders on that side are what you would call the fuses. On one side of this porcelain form there is stamped the letter "L". That is the line where the line wires come in; and these two metal terminals here which have screws, they are the terminals; and the wires coming in from the cable are attached to these terminals here and screwed down tight. And then, you notice that the terminal has a metal contact over to the fuse, so that makes the fuse in circuit with the terminal. And then, when your wires come in, they are connected here so that you get your current into this terminal and then it goes through these fuses. And then, on the other side, you also have wires which are connected here, and at the other end the terminals are likewise connected to the fuses. (Tr. p. 454.)

Further describing the protector block, we have these metal parts on the outside. In this center piece, taking off this cap, inside you have the porcelain and on the inside of each of the terminals is the carbon. Then, imbedded in the porcelain, you have a small strip of carbon. This carbon is a conductor and the porcelain is the insulation.
202 On the bottom of this, inside of this wax covering, there are certain other wires. One of these wires connects to this central terminal and that central terminal is connected to grounds. That is what may be termed a ground, that I hold in my right hand. This is a pipe, and to the pipe this clamp is fastened, to ground it. (Tr. p. 455.)

Then, we have a wire which in turn is connected with the clamp which makes it come in contact with the wire and this other end of the wire is connected to the ground on this protector block. If excessive current was travelling along the line, it would come into these terminals and under the bottom of that terminal it is connected with this metal lip. That is the lip inside the protector. From that lip through the means of the carbon block which rests against the ground plate and the porcelain block, which has a carbon inserted in it, the excess current would be led to jump a gap which is about a thousandth of an inch. That is why the small piece of carbon is depressed, set back from the edge of the porcelain. It forms an air gap which, under normal telephone current, does not operate. Your excess current, over and above that, goes to the line. It jumps from this insert of the carbon block to the carbon block, to this brass ground built out through this to the water pipe, to the ground. (Tr. p. 456.)

It is a fact that the protector block, such as the one I have shown to you and the one as to which I testified, is only used where you have exposed aerial wire or cable; and that is only used where you come into the house, for instance; it may be on the outside of the house or inside the house. That is common practice. I have never known of a protector block such as this being used inside a place where you had P. B. X. and to a station running from the terminal box in the attic to the station such as Captain Hellweg's station in this case. It is seldom, if ever, used in underground construction, at all. I have seen it used on long lines after they came out of the underground. By "long lines", I mean where the station is isolated from other places. I mean where it is not quite underground, where it is connected with the overhead rather than underground, and that is what it is used for. (Tr. pp. 457, 458.) 203

When I told you yesterday that the protector block should be placed as close to the desk stand as possible, referring to the desk stand of the Captain, I meant by that, to afford full protection to the person using the telephone, it should be placed as close to the stand as possible. It is not common and general practice to do that. As to whether that is simply my individual idea about that, I do not know that it is my individual idea. It is a matter of fact.

I do not know of any case in general or common use in telephone construction and maintenance that a protector box, such as this, is used in a case such as we have here, where you have a P. B. X. and a pair of wires coming off from the terminal box in the attic and running from this station into the protector box, such as the wire running from the terminal box in the attic to the station at the Captain's desk. (Tr. p. 458.)

204 Thereupon, there was handed to the witness a piece of porcelain tubing and, ofter having examined it, he testified: That is what I referred to as porcelain tubing, or similar to that.

(Pursuant to stipulation of counsel the piece of porcelain tubing exhibited to the witness will be produced in the Court of Appeals at the hearing of this cause.)

When I said that this porcelain tubing insulation was a thousand times the insulation we have on twisted wires, I meant it was a thousand times more resistant, depending on the insulation tubing. I said that the insulation on this twisted wire was a protection against about 250 or 300 volts; so that this porcelain would withstand 250,000 or 300,000 volts before it broke down. I don't know how many volts the insulation of this twisted wire is tested for. I do not know what the la~~s~~test specifications are. I do not recall what the specifications were when I was familiar with them. I do not know about the telephone wire, what it is tested for, how many volts. I do not know what the breakdown test is for insulation of wiring of this kind. (Tr. p. 459.)

I testified yesterday that there were several devices for protection against lightning that the telephone company just does not use, and one I mentioned was this choke coil or helix. That is to subscribers' stations. I have not had any knowledge or experience in telephone construction or maintenance where these choke coils were used on a subscriber's station, on a layout such as we have in the Naval Observatory.

205 Thereupon the attention of the witness was called to the bell box which is attached to the telephone instrument which is a reproduction of the telephone instrument which was on the desk of plaintiff, on June 6, 1934, and, after looking at it, he testified that it is similar to th bell box which was attached to the Captain's desk in his office. In that bell box there are coils. There is an electric coil on the choke circuit. That would act as a choke for any foreign current on that particular circuit. This circuit is connected with this receiver. (Tr. p. 460.) Before any current could come to this receiver, it would not have to go through the choke coil. This (indicating) is across the transmitter circuit. As to whether it would have to go through this bell box to get to the receiver, well, it is coming in directly from the other party who is talking on the receiver side. The current coming on through, some of it would come through there as a split current. The choke coil is not being used to protect against foreign current. It is not used for that purpose. If any foreign current came in on that line, part of it would have to go through those coils before it got to the receiver. All of it would not have to go through there because it is shunted across the line.

I could not say how much would go through. It might be measured in a laboratory. I could not tell whether all of it would go through or part of it would go through. (Tr. pp. 461, 462.) That coil is in the box there as a retardation choke in the transmitter circuit.

As to whether I do not know if it would be 24 volts, well, that is part of the system. It has nothing to do with
206 the voltage, Your Honor. It is just like condensers in the line, taking the relay kicks out, and so on. There are numerous devices in the telephone system which have absolutely nothing to do with the transmission of sound but have to do with the signal devices. It is more or less of a protecting device, in a way. If excess current came on there, it would burn that out before it got to the insulating capacity. It would make it dead beyond that. Under certain conditions, it would short-circuit it at that point. It would not do it under all conditions. Excess current would short-circuit it. When you short-circuit a thing, you stop it right there. For instance, to illustrate that, if you had two conductor bars running out from a power house, we will say, this side of this bar being one conductor, and the other side being the other conductor, the conductors being metal bars, or copper bars, if at a point indicated, you take another metal bar and put it across there, you short-circuit it at that point so that no power would go out beyond that point. It would stop at that point and then would go to ground provided this bar (indicating) had the same carrying capacity. Both having the same carrying capacity, it would go back to the power house or to ground. (Tr. p. 463.)

And you would not get anything beyond that. When you short-circuit anything, you cut it off at that point. It would require in excess of 100,000 volts to arc across a gap of 2½ to 4 inches. I do not know exactly. As to whether air is a conductor or is an insulator, it depends on the condition of the air, the dryness, or wetness of the air. Dry
207 air is a very good insulator. If you had two spheres or two needle points, each at about the point of my fingers, with air in between, in order to arc across from one to the other, you would have to break down the resistance of that air in between, which is an insulator.

I am familiar with the American Institute of Electrical Standards. I have read them. (Tr. p. 464.)

As to whether the telephone receiver would act as a sphere, I would say it would be in that category. That would be equivalent to a sphere, and "sphere" means blunt and not pointed, in electrical parlance.

Thereupon the attention of the witness was called to a copy of the American Institute of Electrical Engineers' Standards and measurements to test voltage and dielectric tests, No. 4, May, 1928, and particularly to page 6, which refers to needle spark gap and sphere spark gap, and he was asked to take said pamphlet and state how many volts it showed it required to gap one inch and, after having examined it, the witness testified that this is not in inches. It is in millimeters. There was noted in pencil on the pamphlet the translation of millimeters into inches, showing that 23.4 millimeters represents 1 inch, and witness testified: That is about it. I would not be positive of it.

Examining said pamphlet, witness testifies it shows that, looking down opposite 23.4 millimeters, it gives you 25,000 volts, so that if the space were 4 inches you would have to multiply by 4, and that is about 100,000 volts. (Tr. pp. 465, 466.)

208 Static electricity is that electricity which potentially has no motion; that is to say, the same electricity, put on two sides of a condenser. It has not any motion until some path is furnished where it can break down. I refer to that as a condenser, and two metal plates separated and insulated. By "static" I mean not in motion. That would be the same thing, for instance, as the clouds and the earth. They would be the two plates, the cloud one plate and the earth another, and until you have a discharge it would be static. If you had this static condition, as to how would it be discharged, why, some metal by which that dielectric strength was decreased; that is to say, the insulation between those two objects was decreased to a point where it could arc over. That is what I mean, to break down the insulation or override it. (Tr. p. 467.)

If you ground one of the plates, it would not necessarily have any effect, to simply ground them, unless the potential difference between changed in the process. The ground would not change the difference in the potential. It might

be the same potential as the ground. If you grounded it at a different potential, then the chances are it would break over. The magnitude of the voltage which a condenser can hold as static electricity is dependent upon the degree of insulation, the strength of the insulation, separating the two plates. As to whether if that insulation is weak, or if it is leaky insulation, is it possible for you to get all the voltage in that condenser, that depends on how your potential is built up; depends on the speed your
209 potential is built up. (Tr. p. 468.)

It depends upon the speed on which the static is built up in the condenser, and upon your insulation; it is dependent upon both. If you have a wire charged with electricity, and you have a leak in your insulation, the electricity will leak out through it. There is quite a difference, physical and visual between an arc resulting from a discharge across condenser terminals and an arc between two power wires connected at the generator. Explaining that from the standpoint of an electrical phenomena, the discharge between the condenser plates or around the condenser is usually of a high potential and very low amperage, that is, at a rise in current; whereas, in a generator circuit we usually have a comparatively high amperage and low potential. (Tr. p. 469.) That is one of the physical differences. I do not know of any physical difference. In the case of an arc resulting from a discharge across condenser terminals, it is discharging there. In the case where you have power lines, the voltage is constantly noted on the wire from the generator, and it continues. That is the difference.

I have just testified that clouds relatively represent one plate of the condenser and the earth, the other. Lightning does partially discharge from one cloud to another. I mean, once in a while it does. It does very often. It never goes to ground in that instance. If it discharges from one cloud to another, it stays there in one cloud or the other. You simply build up the potential in the other cloud. (Tr. p. 470.)

210 The reason for that is that you have a negative charge in one cloud and a positive charge in the other. The positive charge is one charge seeking negative fields. That is due entirely to atmospheric conditions, that is, the

atmospheric conditions, the air, which acts as an insulator. That air is such a strong insulator that lightning can not break down that insulation and go to ground, and it goes to the other cloud. If you had a metal object between the cloud and the earth, the metal object being connected to the ground, that would change the situation, quite a different change. The difference it would make would be that the lightning would ordinarily take off to the ground rather than ply its path through the atmosphere. It would do that because your ground would have less resistance than the air. In other words, it would be the path for electricity to take. (Tr. p. 471.)

Lightning discharges seek the easy path, and this metal object extended in the air, and connected to the ground, would be the path which it would seek just the same as a lightning arrester on a house. The lightning arrester is higher than the house; and the lightning is turned around the house after it hits the arrester, because of the fact that the arrester is the natural path for it, the easy path. It will run along the lightning arrester down into the ground and pass off. That is the principle of it. (Tr. p. 472.)

Thereupon, the witness was handed a piece of covered cable and, after having examined it, he testified that he
recognizes that as what he has been referring to as
211 that relaying wiring. That is one type of telephone
cable. These wires which are in this sheath, one pair of them makes a circuit to go to the telephone receiver. These wires, to my knowledge and experience, are separately insulated by paper or by tape. I do not know the breakdown of that insulation. I do not remember the breakdown voltage now. They are designed to stand ringing current, and talking current. Talking current is 24 volts, and ringing current is about 60 volts. (Tr. p. 473.)

It would take in excess of 100 volts to break down that insulation. I do not know how much in excess of 100 volts it would take. Assuming that the breakdown is 200 volts, if you got in excess of 200 volts on there, the result would be that you would have a short-circuit or a ground, whichever came in contact. You would destroy the insulation, so that these two wires which are held in the hand of counsel for defendant would no longer be insulated from each other. These two copper wires would be in direct contact with each other. If there was a high voltage on there, sufficient to break down that insulation, it would not necessarily fuse these two wires together, but it sometimes happens. It may fuse them together, or just short-circuit them; it may do either, just temporarily. (Tr. p. 474.)

As long as they are in contact with the power wire, it would be a short-circuit, and that, being a short-circuit, it would put it out of commission. If you have a voltage to get on this line sufficient to break down the insulation, that would not necessarily cause a short-circuit. You
212 could have a breakdown in the insulation in there and let that pass temporarily, and we will get off the short-circuit. If this insulation was broken down so that the two pieces of metal were in contact with each other, that would give us a short-circuit in any event, for the instant. It would cause a short-circuit as long as that remained in contact; and then, that would put the telephone out of commission, as long as they were in contact. You could not use it. (Tr. p. 475.)

A circular loom is a tube woven out of some fibrous material, and then impregnated with asphalt or some insulating compound so that it forms a flexible tube through which a wire may be passed. It would be a tube similar to the porcelain tube except that, instead of being made out of porcelain, it would be made out of some cotton or wool fibre; then, it would be impregnated with asphalt or some other insulating material, and the wires would run in that.

Thereupon witness was handed the handbook of the American Telephone and Telegraph Company, Specification No. 3853, and was asked if he could find any place in there with respect to the use of this loom and the conditions under which the loom would be used, and, after having examined the book, he testified, they speak of it as a woven conduit, which is the same thing.

Thereupon, witness was asked to read from the book the specifications about the use of that woven conduit or loom, and he read as follows: "Woven conduit should always be secured by tape, clamp or fastener."

Witness testified: That is all it seems to say about
213 it. (Tr. pp. 475, 476.)

Thereupon, the following occurred:

"Q. Do you find anything in there where it says that this woven conduit or loom should be used to cover those wires, such as the wires in this running from this terminal box down to Captain Hellweg's desk? "A. No special mention.

"Q. Is there any mention at all? "A. The picture itself shows it.

"Q. What picture? "A. Coming out of the loom.

"Q. But I mean to say, the conditions under which that is used? "A. No.

"Q. It does not show that this loom or the woven conduit should be used from these twisted wires in that branch which ran from the terminal box to Captain Hellweg's station? "A. No. It does not show it there.

"Q. It does not specify it shall be used in such conditions as that? "A. No." (Tr. pp. 476, 477.)

I testified that I heard the testimony of Dr. Robertson, Mr. Dickey and the colored boy, Fraction, describing this blue flame, and from their description I said that, in my opinion, this blue flame was static electricity; and according to the standards of the American Electrical Institute, in order to have a blue flame or arc across that space, you would have to have a voltage in excess of 100,000 volts. (Tr. p. 477.)

214 Taking the wiring of the telephone company, and the insulation I have testified about, if 100,000 volts had gotten on that wiring, probably nothing of a physical nature would have happened to that insulation except for a moment. It would not have broken down the insulation, not necessarily. By "not necessarily", I mean, well, for instance, the phenomena of lightning; that is what you mean by static. I said it would take in excess of 100,000 volts to arc across there. If 100,000 volts got on the wires of the telephone company in that building, it would not necessarily have broken down the insulation. By "not necessarily", I mean static electricity is primarily potential; in the case of lightning, it does not carry amperage. Voltage is pressure. To give you an example of that, may I go to the board? That is the only way I can explain it. (Tr. p. 478.)

The witness then made a sketch on the blackboard, and continuing his explanation testified: If we have a tank in which we have water, the distance from the top of the water to the point where it takes off or where it strikes a level will determine the pressure of the water. For instance, water has an approximate weight of half a pound to a foot, so if we had a tank with water up 50 feet, we would have approximately 25 pounds of pressure on the line.

That represents voltage. ~~It~~ does not make any difference ~~where~~ whether this pipe is a quarter of an inch or four feet in diameter. Your pressure at this point is the same. That same thing maintains in an electric circuit, regardless of
the size of the wire. The pressure is the same as is
215 imposed on the wire. That is, of course, without any
friction.

The current or what we term amperage depends on the amount of water in the tank and the size of this conductor. In other words, if one inch in diameter, it will carry a certain amount of water. If it is two inches in diameter, it carries the square of that, and the volume of the water represents the amperes.

You have a tank which is 50 feet high. So that you have, in hydraulics what you call a 50-foot head, and each foot in height represents half a pound of pressure, approximately. So that you have got to have these pipes strong enough to hold that pressure. (Tr. p. 479.) And that is the same thing as the insulation on the wire. So that, if you had in that line 100,000 volts, you would have to have insulation to hold 100,000 volts; otherwise, it would not hold it. If you had that 100,000 volts on there, it would break down the insulation; it would for the moment. It would not break it down entirely. If the insulation was broken down, it would not restore itself so far as the hundred thousand volts was concerned, but it would restore itself so far as the lower voltage is concerned. Dealing with the 100,000 volts, it would not necessarily destroy the insulation. I qualify that by saying "not necessarily", for the simple reason, if you will give me the opportunity, I will say that the insulation on a wire is not identical with the wall of a pipe. Once the wall of a pipe is ruptured it will always leak. That is not true with rubber insulation or paper insulation, or anything else. It has a tendency to close it.

The rubber and the paper hold up, so far as the les-
216 ser voltage is concerned. If you take a knife and
scrape off the insulation and put the two wires to-

gether, you have no insulation, but that is not analogous. When you break down the insulation, I mean by that static electricity or high tension, for instance, has a tendency to break through and it may make small perforations. There is no burning effect. It is only the static effect. I have seen wires where lightning had gotten on the wires—thousands of them. As to whether you do not always see a puncture, you can see it microscopically, but you can not with the naked eye. I am positive of that. I have examined that, and seen it. (Tr. pp. 481, 482.)

My attention was called to the lights lighting up on the switchboard. My attention was also called to this noise which the witness, Cook, testified he observed in the switchboard, which he likened unto a rattling sound or a sound resembling the tearing of canvas, and I testified that in my opinion that was caused by some foreign current being introduced in the system at the moment and the noise was due to the relays closing. I am generally familiar with the switchboard in the Naval Observatory, the construction of it. (Tr. p. 482.) I looked at the switchboard in the Naval Observatory. I did not examine the connections minutely.

Thereupon, by agreement of counsel, and approval of the Court, there was offered and received in evidence photograph of the rear view of the switchboard, in the Naval Observatory, marked "Plaintiff's Exhibit No. 21."

Whereupon, said Exhibit No. 21 was handed to
217 witness and, after having examined it, he testified,
that the photograph appears to be the same as the
back of the switchboard which was in the Observatory.

Thereupon witness was asked to look at the photograph (Plaintiff's Exhibit No. 21), and tell how many relays there are in that switchboard, and he answered, provided these cans are full, there are 30 there. There are three rows which represent cans. There are about 55 or 60 there. They are different kinds of relays. There are line relays and signal relays. I physically examined this switchboad, as shown on the photograph. (Tr. pp. 483, 484.)

This switchboard is grounded, and the grounding of the switchboard grounds all of the wires that run to the switchboard. It grounds one side of it. As to which side it does ground, it all depends on which side was grounded. I do not know which side was grounded. Under certain conditions they are all grounded. If it was grounded all the time, it would not operate. There is a ground there all the time, but it is only operative when the relays are connected. I said that this tearing sound, in my judgment, was made by the relays.

Thereupon, there was handed to the witness a reproduction of the relays shown in the switchboard and, after having examined them, he testified: Those are relays. They are the kind of relays which I find in the back of this board. (Pursuant to stipulation of counsel, said reproduction of the relays will be produced in the Court of Appeals upon the hearing of this cause.) (Tr. p. 484.)

218 Thereupon, the witness was asked to point out to the jury the metal parts which come together to cause this rattling and which would make the noise to which he testified, and, using the delays to illustrate, he testified: This is the coil of wire which is energized when the current is put on it around the coil which picks up this armature, and the picking up of that armature, if it is done rapidly enough by the electric current, produces a sound. The sound is made by them clicking together. With the use of the metal parts, the witness illustrated to the jury how they clicked together.

Resuming, witness testified: That is the noise they make. They do not all make about the same noise. There are different tones. As to whether they did sound anything like tearing, if they all came up simultaneously, they would, though.

Ordinarily, these relays do not keep opening and closing, but if there is a static discharge in there—(Tr. p. 485.)

I do not know whether a static discharge came in there, or not. I do not know what caused the noise because I was not there.

This morning, I testified that foreign current may get on the line, from many causes, and I think I mentioned the causes as power lines, static due to electricity, and the corona. There were no power lines at that place, and in contact with the telephone lines. I did not see any. (Tr. p. 486.)

Thereupon, the following occurred:

"Q. As to the lightning, if this lightning had gotten on that telephone line so as to cause this arc to 219 cross that space, which was not less than two inches, which according to you would require a hundred thousand volts, and assuming that immediately after that, or within five minutes after that, this Captain Hellweg used that telephone and got the switchboard and through the switchboard got the exchange and then was connected with Decatur 1350 and talked to a person there, and also put in a call through that same means and talked to an assistant manager or some person in the Telephone Company's office, if a hundred thousand volts had gotten in there so as to cause this arc, you could not have used that telephone in that way, could you? A. You might have been able to.

"Q. Could you? A. Yes.

"Q. Do you mean to say as an engineer positively that this could have been used? A. Yes.

"Q. That it would not have been damaged in any way? A. I would not say in any way, but it would not be damaged beyond use.

"Q. You are positive of that, are you? A. Quite positive. It is done every day.

"Q. Sir? A. It happens every day.

"Q. It happens every day that a hundred thousand volts gets on a wire and causes an arc of this kind and does not do any damage to the insulation or the wiring or cable system or the instruments? A. I do not say that it happens every day, because of an arc like this. 220

"Q. I am talking about a hundred thousand volts to cause an arc like this. A. It would not cause the arc unless the conditions were the same.

"Q. The arc could only be caused but by a heavy discharge of current? A. Yes, but it is purely incidental.

"Q. It is purely incidental to what? A. To the lightning, as though getting on the line." (Tr. pp. 486-488.)

I spoke about voltage being pressure, and current or amperage is something different. Amperage is a discharge of energy. If you have an arc across there, you have got to have a heavy discharge of energy to arc it. but that needs qualifying, qualifying in the way that when it is a combination of pressure and current, in the sense we are speaking of, as a combination of voltage and amperage, you can have a million volts and practically no amperage. If you had an arc of this kind, you would not also have a high amperage. If you had amperage, you would not have the Captain here. You could have this arc without having the amperage. (Tr. p. 488.) I am quite sure of that. This arc across there was evidence to my mind of a current of electricity. The current of electricity was dissipated. It was dissipated going through the Captain's body. It was dissipated over his body, and the rug, and everything else that had that opposite potential. I mean, by "dissipat- 221 ing" it, it found enough capacity of air and ground to spread itself out and become harmless again. It was seeking ground or a different potential. As to where that ground or different potential was found, I do not know. I was not there. I do not know where it went to. I can tell by past experience that it was dissipated, either by getting to the ground, or getting to a body having a different potential. (Tr. p. 489.) A potential of that nature or of that volume could go to the ground by lots of means. It may get through the rug. It went in his body and down to his feet, and came out of his feet. And then it went along the rug or whatever happens to be there of a different potential, and disappears or dissipates itself in thin air, or into the ground. Then it was a harmless thing. (Tr. p. 490.)

I spoke of these various companies, of whose operation I had knowledge, and among them, the Southern Bell Telephone Company. I just worked for that company periodically, doing some special work, or something of that sort. I do not remember the periods, but they were short. (Tr. p. 490.) I think I went there for a few months, in 1920, or 1921.

This Central Union Telephone Company, of which I spoke, that is one of the subsidiaries of the American Telephone and Telegraph Company. It was not a subsidiary of the Southern Bell Telephone Company. I knew there was such a company in existence as Central Union, I think, as late as 1910. It was known by that name. I think it was in 1910, or 1912—more than 25 years ago. The experience I had with the Pacific Telephone & Telegraph Com- 222 pany was installing equipment within their building in San Francisco, about in 1910 or 1911, somewhere in that neighborhood. (Tr. p. 491.)

I worked for the Cumberland Telephone Company during the same period of time. (Tr. p. 492.)

Thereupon, on redirect examination, the witness further testified: In response to questions asked on cross-examination, in speaking of this arc being a harmless thing, I meant it was harmless after it had been dissipated. A lightning rod does not always protect a building, not in every instance. It does protect a building when it is properly installed. There is only one proper way to install lightning arresters. (Tr. pp. 492-493.)

At the Naval Observatory, I inspected the insulation. When I was in the United States Army, I was the engineer in charge of construction and design of geoscopes. A geoscope is a very sensitive telephone on the end of a piece of pipe that we move ahead to protect mining. We push it through the ground and through a switchboard just like this PBX, and so listen to it continually to see what the enemy is doing. That is a telephone. I had charge of that. It does not make any difference how many wires come from a cable into a building. It does not have any effect on the building except to increase the capacity of the cable. (Tr. p. 494.)

These twisted wires that came from the terminal box are not grounded except under conditions when in operation. They are grounded through their relays. This black tape which is shown on the photograph (Plaintiff's Exhibit No. 20) is used to prevent friction, and for insulation. It is used for both. (Tr. p. 495.) 223

Having in mind the clock on the wall which I pointed out, and referring to the beams in the attic, and their location, as I recall it, there was a beam about where they came out, and a beam in the center, and one where they went out, and one where it entered. That makes the three beams. (Tr. pp. 497-498.)

With reference to this telephone box, this instrument here is a choke coil. It is a choke coil in a sense. By that, I mean it is a choke coil in that it diminishes any current going through it. It is not in any way a choke coil. It is intended as an induction coil, to step up the voice. It is not the type of choke coil to which I had reference in my direct examination when I drew that diagram on the board. It is an entirely different device. The one which I drew on the board was a protective device. It does not have any protective qualities, compared to the choke coil which I described. (Tr. p. 498.)

Explaining the difference between them, the choke coil used to retard a current to keep it from going to a certain point in its full velocity, is simply a coil of wire, and it is usually a fairly sized wire. It is simply in a line. The line comes up here and comes out here (indicating on blackboard); it is usually used in connection with electric device,

As to how that choke coil can retard a hundred thousand volts, it has that facility. A high current tends to go in a straight line, and if you attempt to run it around
224 something it stops it. This particular coil in this box
is an entirely different kind of coil, and while it does have a choking action on the current—any coil does—this coil is one like this, with a very fine wire. and then around that wire is insulated, and in the center of it it has a separate coiled wire, and around the outside of that coil is an insulated bracket, usually of paper, and on top of that coil is wound a second one, and it has no physical contact with this circuit. It is a small transformer. In this protector block, I said there was some porcelain in there. (Tr. p. 499.) It is not a porcelain tubing. It is a porcelain block. The purpose of that porcelain block is insulation. It is to prevent excessive charges of current from going where you do not want it to go. It is the same type of porcelain to which I referred when I mentioned these porcelain casings or tubings; and the porcelain casings or tubings are the same as that. It is a dielectric, or insulation. (Tr. p. 500.)

I do not recall, offhand, how many hand books the A. T. & T. has issued relative to the installation and insulation of wires. There have been many. They are not all known as hand book No. 3853. They have different specifications. (Tr. p. 500.)

I stated, a few moments ago, that if there was any amperage in that static discharge, that Captain Hellweg would not have been here. By that, I mean that it would have killed him, that is, if it had amperage. It did not have much amperage. I know that by the result. That is not
225 a mere guess. (Tr. pp. 500-501.)

Thereupon, on recross examination, the witness further testified: I said, as I recall it, that there were three of these beams between the place where these wires came from the terminal box and entered the duct. I testified that, after looking at these photographs, I could only find one beam, where the wire came near to the beam. It is my recollection that I just now testified that there was a beam where the wire came out from the terminal. I looked at this photograph. I said I did not see it there because it is probably so near like the masonry. I do not know that these beams are all painted white, so that they would show on the photographs. I was not there when the photographs were taken or afterwards. As far as I know, all of these photographs, where you do see beams, the beams are painted white; and I do not see any in this photograph, and I do not see any on that wall. (Tr. p. 502.)

I say, to the best of my recollection, that when I was there there were three.

Thereupon, on redirect examination, the witness further testified as follows: These beams were not painted when I saw them. (Tr. p. 503.)

Thereupon, the following occurred:

"The Court. I would like to ask you a question or two.

"By the Court:

"Q. You said you heard all of this testimony here, and you heard at the time this happened there was this loud crash of thunder and there was lightning going on at the time this happened? A. Yes.

226 "Q. What caused this? A. What caused this whole proposition?

"Q. Yes. What was the primary cause? What put it in motion? In other words, if there had not been any lightning there would have been no accident? A. That is my opinion.

"By Mr. Bettelman:

"Q. Would you say that was definitely due to the lightning? A. I could not say that.

"By the Court:

"Q. What else could it be due to? You have all the known facts? A. I know the facts and in my opinion, sir, it was lightning. What I meant to say was that I could not say it positively because I was not there." (Tr. pp. 503-504.)

Thereupon, further to maintain the issues on his part joined, plaintiff called as a witness **Roy Aikman**, who having been duly sworn, testified as follows: I am a Chief Pharmacist, Bureau of Medicine and Surgery, United States Navy. I am assistant to the officer in charge of the record division. In response to a subpoena duces tecum, I have produced certain records pertaining to Captain Julius F. Hellweg, for the period from 1924 to 1935, inclusive. (Tr. p. 505.)

Thereupon, photostat copies of said records produced by the witness, showing the examinations of the plaintiff from 1924 to 1935, inclusive, were offered and received in 227 evidence, marked "Plaintiff's Exhibit No. 22." (Tr. pp. 505-510.)

Thereupon, further to maintain the issues on his part joined, the plaintiff called as a witness **James Frank Hooker**, who, having been duly sworn, testified as follows: I am a Commander, Medical Corps, United States Navy. I graduated from the University of Louisville, in 1914. (Tr. p. 510.) I did postgraduate work at Harvard University, and attended the Mayo Clinic at Rochester, Minnesota. I specialized in eye, ear, nose and throat. I have been in the naval service for twenty-one years. (Tr. p. 511.)

I have met the plaintiff, Captain Hellweg, on three or four occasions. I partially examined his eyes twice, the first time on July 22, 1936, and the second time was on April 22, 1938. I did not make a thorough examination of his eyes when I first examined them. (Tr. p. 512.) I examined the glasses to see if they were corrected up and to see what his distant vision was. The first examination disclosed that the right eye was 6/20, and the left, 8/20. In the naval service we consider reading a certain line at 20 feet a standard of average normal vision; and he read it 6 feet away in the right eye and 8 feet away in the left eye, making 6/20 and 8/20. That is not normal vision. The normal would be 20/20. I changed his glasses and gave him a prescription for them. I did not make any further examination of his eyes at that time. (Tr. p. 513.)

My next examination was on April 22, 1938. I only checked his distant vision. It was 2/20 in the right eye and 5/20 in the left eye. I did not make an examination 228 of his ears. I do not know whether there are any records at the Naval Dispensary pertaining to an examination of his ears. I am familiar with the regulations regarding the annual physical examination required by the Navy. (Tr. p. 514.)

There is a different type of examination for members in the service who wish to enter the aviation branch of the service. There is a difference in the requirements of hearing and sight for a naval man who wishes to enter the branch of aviation. It is much more rigid than the annual examination. (Tr. p. 518.)

Thereupon, on cross-examination, the witness further testified: The test I made of Captain Hellweg's eyes, on July 22, 1936, was without glasses. I had him look at some letters. Assuming that he is a man now 59 years of age, that age ordinarily would have something to do with his eyesight. On July 22, 1936, the right eye was 6/20, and the left eye was 8/20. (Tr. p. 519.)

According to my records, on July 22, 1936, I gave him a new prescription. The glasses corrected the condition of his eyes to normal. Then I examined him on April 22, 1938, for distant vision. At that time, his right eye was 2/20 and the left eye 5/20. I did not change his glasses then. That is as far as I went on that examination. The Captain was in a hurry at that time and did not want a complete examination, and that is the extent of the examination I made on these two occasions. (Tr. p. 520.)

229 Thereupon, further to maintain the issues on his part joined, plaintiff called as a witness **Dr. Norman P. Scala,** who having been duly sworn, testified as follows: I graduated from George Washington University in 1920, receiving the degree of Bachelor of Medicine, also the degree of Bachelor of Arts. I attended Georgetown, receiving the degree of Bachelor of Law. I attended the University of Vienna, from 1924 until 1936, at different times. (Tr. pp. 524-525.)

At the University of Vienna, I studied eye, ear, nose and throat, and have specialized in that practice for about 14 or 15 years. I took a postgraduate course at Manhattan College, and a postgraduate course at the Polyclinic of New York, and the Temple University of Philadelphia. I have been up there doing research work on the eye for the last five or six years. I made an examination of Captain Hellweg's eyes. I started in October, 1937. I made a very extensive examination for two or three weeks, and I have been seeing Captain Hellweg off and on all the time since then.

In October, 1937, I made an examination of his visual acuity, that is, direct vision. The field is the indirect vision of passing objects, that is, from the sides. (Tr. p. 526.)

I made an examination of the fundi, that is, the whole inside of the eye, including the optic nerve, and all the vessels and linings and coats of it. and the external—I should say it is all the appendages, the lids, etc.

In the examination of Captain Hellweg's right eye, I began with the acuity of vision, first, well, I suppose I took the fundi. I made an examination of the interior of the
eye. I found that the optic nerve of the right eye
230 was not distinct, fuzzy. By that, I mean in the exam-
ination of the anterior of the eye, and I examined the optic nerve which was not directly distinct on the inside of the eye. That was when I made the examination, and it was not normal. I could see the optic nerve very clearly, and it appeared fuzzy. and that is indistinct and not well outlined. Any disease or injury to the eye may cause the optic nerve to become indistinct or fuzzy, as I have described it. (Tr. p. 527.)

I found above the optic nerve there is an oval area, I should judge, about five-eighths millimeters, of a grayish color. I would take that to be a hemorrhage or an edema of the eye, a fluid in the eye, coming into the retina, due to some injury. The retina is the internal covering of the eye. The edema in the retina is a fluid that seeps out of the blood vessels when they have been injured in some way. Then I took the fields of the eye. (Tr. p. 528.)

The field is the indirect vision of the eye. That is all of the vision, other than directly in front of you. As a result of my examination, I found in the fields of the eye the form was very much contracted and that it was for all colors. As to blue and red it also contracted down to within about three quarters of the field. Three quarters of the field was contracted down for form and color. By "contracted", I mean the inability to see an object to the left, right, or above or below it at so many degrees. I say, that was three-fourths diminished. I mean there was 25 percent vision left of the indirect vision.

In the direct vision, I found that, under drops,
231 medicine, without correction it was 20/200. By that,
I mean the vision at 200 feet was better than it was
20 feet away. (Tr. p. 529.) In other words, the vision was 70 percent, practically. I found, on testing him for the external muscles of the eye, that the external rectus muscle—the muscle toward the right of the eye, the external muscle—he had double vision, and it took about a four, by the dioptre, which is a measuring instrument, to correct it. That instrument is the best glass prism. It is an instrument to correct the vision, to bring it over so that he would have single vision.

When I made the examination of Captain Hellweg, I did take a complete history. I made notes of it, but I do not have the notes here with me. (Tr. p. 530.) The history that Captain Hellweg gave me was that he was telephoning and it was during a storm, and the lightning hit the telephone and caused the injury to his eye and ear, and that he was knocked unconscious.

Taking the condition of the optic nerve, as I have described it, and as I found it in Captain Hellweg's right eye, as to what is the difference between the width of the optic nerve and the width of a normal optic nerve, I would not like to make that statement. I would not like to say. (Tr. p. 531.) The difference between the normal optic nerve and the optic nerve as I found it in Captain Hellweg's right eye, I would say it may have been several millimeters. That difference of several millimeters does not amount to anything if the nerve is distinct and well outlined. When the
nerve is not well outlined or distinct, it means it has
232 been injured in some way. As to what effect that
would have, if any, on his ability to see, it would affect the acuitive vision, affect the field of vision, and of color, form, and may have affected the entire eye in any way. It injures the optic nerve to a certain extent. This optic nerve was injured to the extent that it contracted the field down to three-quarters; that the acuitive vision was diminished; and that it was—some of the nerve fibers were injured in the retina at the junction of the optic nerve. (Tr. p. 532.)

There is not anything that I know of in medical science that would correct the condition of the optic nerve as I have described it. As to whether that condition would be a progressive condition, or retrogressive, I think it would—it depends upon the length of time that the injury has occurred. (Tr. p. 533.)

As to whether continued reading with the eye will affect the optic nerve as it now exists, I do not think the nerve can stand as long a course of reading or strain on it. It won't hold up as good as the normal eye. By that, I mean, he would give way on it. He would have difficulty in using the eye. If he did give way on it, as to what would happen to the optic nerve, it would become irritated and probably would become—he could not use the eye for a certain length of time. It would have to be treated again. That would affect any part of the vision that he now has. It probably would. I would say that, by continued reading, both his
direct and indirect vision would be lost. In other
233 words, he would be absolutely blind. I did make an
examination of his left eye. I found the left eye to
be perfectly normal with the exception of some very little fuzziness of the optic nerve—practically a normal eye. The optic nerve may have been affected just slightly. (Tr. pp. 534-535.)

I prescribed glasses for his eyes, about three or four pairs. They were for distant vision, near vision, and two intermediate visions. By "intermediate visions", I mean in between distant and near vision, and it might have been between near vision and no vision at all. In my opinion, it was necessary for him to have those three or four kinds of glasses which I prescribed for him.

From the history given to me by Captain Hellweg, and from my findings as the result of my examination, as to what was the cause of the injuries to his right eye, in my opinion, from the history and from what I saw, I am of the opinion that it was due to the electrical shock, whenever he got the stroke. But, of course, in making my examination, I did have photographs made of the eye. They were made by Edmonds, the opticians, located on Fifteenth Street. (Tr. pp. 535-536.)

Thereupon, the witness produced a photograph which was made of the right eye of plaintiff, by Edmonds. Said photograph was offered and received in evidence, marked "Plaintiff's Exhibit No. 23."

(Pursuant to stipulation of counsel, said photograph (Plaintiff's Exhibit No. 23) is omitted from this bill of exceptions, and will be produced in the Court of Appeals at the hearing of this cause.)

234 Witness, resuming, testified: That photograph discloses the fuzziness and the indistinct outline of the optic nerve. (Tr. p. 536.)

Thereupon, the witness stepped before the jury and pointed out on photograph (Plaintiff's Exhibit No. 23) the indistinctness and fuzziness of the optic nerve.

Resuming, the witness testified: I said something about Captain Hellweg's fields being contracted as to form and color. There are degrees used to measure the ability to discern form and color. For form, the largest degree is on the temple side, to the outside of the head, which is about 90 degrees. As to the degree for color, blue will come within 10 to 15 degrees smaller. The largest degree is 90. The next is within 10 to 15 degrees difference; that would be blue. (Tr. p. 537.) The blue would be about 10 or 15 degrees smaller than the form field. That would be about 75 or 80 degrees. Red would be about—between 10 and 15 degrees, on an average, smaller than blue. Red is less than blue.

As to what was the degree that Captain Hellweg's right eye could distinguish for form, I will have to get that from this chart. This is a chart of the field for form and color.

Thereupon, witness produced a chart which was offered and received in evidence, marked "Plaintiff's Exhibit No. 24."

(Pursuant to stipulation of counsel, said chart, (Plaintiff's Exhibit No. 24) is omitted from this bill of exceptions and will be produced in the Court of Appeals at the hearing of this cause.) (Tr. pp. 538-539.)

Thereupon the witness produced another chart and testified that it is a chart mapping out what we call the physiological blind spot, the natural blind spot where the
235 optic nerve comes through. The chart produced by the witness was offered and received in evidence, marked "Plaintiff's Exhibit No. 25."

(Pursuant to stipulation of counsel, said chart, (Plaintiff's Exhibit No. 25) is omitted from this bill of exceptions and will be produced in the Court of Appeals at the hearing of this cause.)

Witness, resuming, testified: Referring to Exhibit No. 24, as to what degree Captain Hellweg's eye was with reference to form on the date I made by examination, as to what degree it was contracted, it was contracted down—I will tell you in a minute, in form, down to about, in some places, to 40. and in some places to 30. It was an irregular field. As to the color blue, it was contracted down to 30 and 20, and as to red, down to about 10, or a little less. (Tr. p. 540.)

Referring to Plaintiff's Exhibit No. 25, and stating what the condition of his blind spots were, well, I found the blind spot in the right eye about three to four times larger than the normal blind spot in the left eye. The blind spot in the left eye looked to me to be a fairly normal spot. By "blind spot", I mean, that is where the optic nerve comes through. People don't know it, but they cannot see in that area. and when that is enlarged, it is due to an injury. The blind spot, called the physiological blind spot, which is about 5 to 7 degrees, is where the optic nerve comes through into the eye, and in that part you cannot see anything: that is, in a normal person. When the nerve is injured, this blind spot is increased so that it becomes larger.

236 As to what effect that has on the eyesight, it produces what we call scotoma, which is an enlargement of the blind area in your external vision. By that, I mean in the normal blind spot. the average person does not know he cannot see, and where it is enlarged, a person realizes that he cannot see, and it also denotes injury to the fibers of the nerve. (Tr. p. 541.)

This condition of his right eye will probably cause a change of glasses in the future.

As to whether it will cause many or few, it depends—you cannot tell. I would not like to say how quick the eye is going to deteriorate, or what it will do. (Tr. p. 542.)

I have not yet made a charge for the services I rendered, but the reasonable value of my services would be between $100 and $150—about $150. (Tr. p. 543.)

Thereupon, on cross-examination, the witness further testified: I first examined Captain Hellweg on October 1, 1937. I made the examination by listening to the history, taking what notes were necessary, by an external examination—that is, looking at the case. He gave me a history,

that he was using the telephone and that he had this lightning come in on the telephone, and that he was knocked unconscious. He told me that. (Tr. p. 544.) He told me he received an injury while he was using the telephone, lightning striking the telephone, or whatever it was, around there. I did not understand it struck him in the ear. I understand it struck the telephone. I understood he was struck on the whole side of the head. He told me
237 that he was knocked unconscious. If he did tell me
how long he remained unconscious, I don't remember. I don't know that it would be an important factor for me to know how long he remained unconscious. When the stroke came, I took it that it did it immediately, and then it would progress along from the stroke. He would naturally gain consciousness after a while, depending on the force of the blow. (Tr. p. 545.)

I did not ask or find out how long he was unconscious. I don't think I did. I didn't ask him whether he was able to use the telephone within five minutes after he received this blow. If I remember right, I think he said there were several men there that picked him up off the floor, or something, assisted him. I think he said there were several men there that picked him up off the floor. That is a mental memorandum. I am not sure that he told me that he was knocked down on the floor. I cannot say. I mean he might have told me that. I did not know what he was on, or whether he lay on the floor, but these men assisted him when he was struck by the lightning. If a man is knocked unconscious, he falls down absolutely, just like a man in a prize fight, when he is knocked out. He told me that he was knocked unconscious, knocked to the floor. (Tr. p. 546.)

I cannot say whether he was knocked to the floor, or not. He just told me that he was knocked unconscious, and needed assistance, and someone picked him up from the floor. My answer is, in my recollection, he said that he was knocked unconscious. He was assisted by several men there.

That is as far as I can go in the matter. I cannot
238 say whether he was on the floor, or in a chair, or
where. I don't know. He did not tell me how long he was unconscious. I cannot remember, now, where he told me he was at the time this thing happened. I don't remember. All I know is he was using the telephone. This was not a superficial history that I got. A man comes in and

tells me he was struck by lightning, and I am not up there where he is struck. I don't know where it was. I examined him. (Tr. p. 547.)

This man came to see me on October 1, 1937, and told me about something that had happened to him some time before. I don't know the exact date. As to whether he told me it happened on the 6th day of June, 1934, I don't know the exact date, but it was a year or two before. I certainly did go into this thing with definiteness, to find out what had happened to this man. I absolutely cannot tell you whether he told me that this thing happened on June 6, 1934. That would not be important to me. It was not important. The approximate time he received the injury would be important, but not definitely. An approximation of a year or two would be enough for me, if he was struck by lightning. (Tr. p. 548.)

All I care to say is that he had some kind of a stroke by lightning, a year or two before he came to see me. He told me he had been treated for this condition, before, in the Naval Dispensary or Hospital. He was treated by the Navy doctor. He had an examination. I don't know what treatment he got. He was examined by two other eye doctors before he came to see me. I cannot say that he said he had treatment, but he was examined by them. That
239 is all I know. He was wearing glasses when he came to see me. The glasses had been prescribed by a Naval doctor, I think. I did not ask him, that did not interest me. (Tr. p. 549.)

As to whether it would interest me to find out the prior history of this man, from the time he is said to have received this injury, it would, so far as the time of the injury, the approximate time, and so forth, is concerned, but not about who prescribed glasses. That would not interest me.

In a case like this, the condition of the optic nerve, I would say it would be due to trauma. I cannot say that the condition of the optic nerve which I found could be due to many causes. I would not say that a condition like that could be due to causes other than injury. Some of the other causes for a condition of the optic nerve such as I found, are shock or a blow, any kind of a blow, a shock. I think it would be some traumatic condition. A shock, a blow, is the same thing, in my estimation. That is one cause in medical science. (Tr. pp. 550-551.)

I said I thought that only a traumatic injury could cause that condition to the optic nerve. I would classify it as injury. I would classify it under injury, in this case. A condition such as I found here was not due to causes other than injury, not in my estimation or in my opinion. I did not testify on direct examination that this condition is due to disease or injury. I said the optic nerve could be affected by disease or injury. The optic nerve condition I found could be caused by disease or injury. I think Captain Hellweg is 58 years of age. I don't know that I did get
240 his age, but I have his age right here. (Tr. pp. 551-552.)

I am judging he is about 58. I have it exactly in my notes. I have notes, and also have diagrams here. The notes were taken at the time I made the examination. His age on the date of my examination in October, 1937, was 58. (Tr. p. 552.)

He was wearing glasses when he came to see me. He did not tell me how long he had been wearing glasses, only he said he had been trying to get glasses fitted to him for the last couple of years, since the injury. As far as I recollect, he told me that glasses had been prescribed by some doctor connected with the Naval Dispensary. I did not give him any treatment. I prescribed glasses to correct the vision.

As men grow older, their eyes are affected generally in a very minor way. Some men's eyes are affected more than others, if they have a general condition to cause that. As to whether I gave him a physical examination to see whether or not there was anything present that might cause this condition of the optic nerve, my answer is I can tell by looking at the eye as to any general condition affecting the eye, in a way. (Tr. p. 553.)

I said that the optic nerve might be affected by disease. Some of the diseases that might affect the optic nerve are diabetes, any of the general conditions, kidney condition. To enumerate the diseases which would affect the optic nerve would take a long time. I would say, any infection of the body is liable to affect the optic nerve. Any
241 disease of any kind in the body would affect the eyes.

In order to determine what the condition of the eye is due to, it is not necessary that a very thorough examination be made. If I found something in the eye that would designate some general condition was affecting it, then I would try to find it. I found the eye was abnormal, that is, the optic nerve, the field and vision. The field is the indirect eyesight. What I found wrong with the eye physically was the optic nerve. What else I did find objectively, which I could determine myself, was the area above, below, and to the side of the optic nerve that I spoke of. (Tr. pp. 554-555.)

The condition of the area above the optic nerve was a grayish oval area, about two or three times larger than the normal optic nerve. I used an ophthalmoscope. That is the instrument which doctors generally use to look into the eye. The optic nerve appeared fuzzy. It was about two or three millimeters in circumference. The best idea I could give you as to how large it was would be comparing it with the blind spot. It was larger than the regular blind spot. There are 25 millimeters in an inch, and that would be about 2/25ths of an inch. With the findings that I found, I would say that the fuzziness of the optic nerve was due to the injury, and not disease. Such a condition as I found was due to injury. In my opinion, what I found would be confined to injury. I found no other condition that produced this fuzziness.

I said a while ago that the optic nerve was affected
242 by disease. When an optic nerve is affected by
disease, you can have a choked disc; that is, the disc is pushed forward. We can have neuritis; that is, neuritis due to disease. We can have edema of the disc. What I found was not due to disease. The condition I found could not be due to any disease of the body. That is my opinion. (Tr. p. 556.)

It is my opinion that this condition was due to injury, assuming the injury to have happened on June 6, 1934.

I specialize especially on the eye, now. I have given up the ear, nose and throat practically. I have confined my practice to the eye, practically to the eye, for the past five or six or seven years, but I have been doing eye work all the time.

If this gentleman had an injury by being struck by lightning on June 6, 1934, causing injury to the optic nerve, I would say that the injury to the optic nerve would first manifest itself—I would say he would feel the effects of it immediately, but to see it, it would probably be a day or so. When you have an injury, you do not at the time have an immediate manifestation of the injury. If this gentleman had a blow which caused an injury to the optic nerve, I would not say that the injury to the optic nerve would manifest itself immediately afterward. I do not know how long it would be. That would be relative, in my opinion, depending upon the stroke, and how he received the injury. I would have to watch it. (Tr. pp. 557-558.)

Taking the blow, such as he told me he received, and being knocked unconscious, and finding this condition to the optic nerve, as to when would that condition to the
243 optic nerve be manifested after the injury, my answer is that it would probably start within a day or so, or within a few hours—probably a day. It would be manifested by blurring the vision, probably, inability to see, and some pain. This inability to see would probably come on immediately. As soon as you have injured a nerve, you have done damage to it, but not altogether. If you injure the optic nerve, you can see as good as before the optic nerve was injured. (Tr. p. 558.)

If you have an injury to the optic nerve, you damage the eye, and you have a contracted or blurred vision. It is not always that you readily know that that would be present. It would not be present completely. It would progress in a certain amount of time. It might take several months to progress. I think it would take several months to progress. It would not take several months to progress so that it would be noticeable. I should say that it would be manifested in a day or two. The manifestation would be that he would be complaining first about vision and pain. The acuity and indirect vision would both be affected. He would tell me—he would come in and say, "I cannot see, my vision is blurred. I had an injury." (Tr. p. 559.)

His far vision would surely be affected. His ability to read would absolutely be affected. When I spoke about the direct vision, the acuity, I meant, by looking directly at an object, and then the field vision is looking with the eye to the right or left, or up or down. The field vision is the passing objects, what you can see at the side.

244 In making the examination, I took each one in its order. I used a roentgenoscope or ophthalmoscope.

Part of the examination consisted of having him look at objects to test what he could see. I testified on direct examination that I found the fields of the eye, as to form, very much contracted. (Tr. p. 560.) I determined that by looking with the perimeter.

Explaining to the jury what that is, well, we have an instrument, a standard instrument, and standard distances with standard objects, and when the eye is at rest, we test out the colors and form. I had him look at some object with the fixed eye, and he kept the eye at rest so that it did not move. And then I asked him what it was at different points. In the field, there was a three-fourths contraction in the right eye. The contraction of the vision for the color blue, I think, was between 30 and 40 degrees, contracted down to 30 or 40, a little irregular, going around. I prescribed glasses for him. (Tr. p. 561.) I prescribed glasses to correct his distant vision, and also his near vision, relatively, to a certain extent. I prescribed three or four pairs of glasses. I prescribed glasses for distant vision, and they corrected the abnormal vision, as far as acuity is concerned, as far as his ability to see is concerned. Before I gave him glasses, he could not see normally at a distance. Then, for near vision, for reading, I prescribed glasses for him. The glasses I prescribed for near vision or reading did not correct that condition. He complained very much as to that. It did improve it for a few seconds. I mean, he could read with the glasses for a short time,
and then it would blur. The glasses did correct the
245 condition so that he could read for a limited time.
I would not say that the glasses corrected the condition so that he could read normally. I do not know what you mean by "normally". (Tr. pp. 562-563.)

My idea of normal would be to sit down and read for several hours without stopping. Speaking of vision, he could see. The other glasses were for intermediate vision, I would would say. That is something between far and near vision; and then probably I might have given him some a little closer, so as to take care of a little closer than the ordinary near vision. Those glasses, in turn, did correct his vision for that use, at that time. I mean at the time of reading. (Tr. p. 564.)

Assuming that the plaintiff was examined by another doctor, on August 15, 1934, a little more than two months after the alleged injury, and at that time an examination showed that the vision of the right eye was 20/40, corrected by glasses to 20/15, as to what that would mean, I would say that that would mean that, at the time of correction, his vision was corrected by the glasses. (Tr. pp. 564-565.) And, assuming that the vision in his left eye was 20/30, corrected by glasses to 20/15, that would show that the two eyes were about the same, practically, within a few feet, ten feet.

Assuming further that this examination revealed, on August 15, 1934, that he could read Jaeger 1, with proper reading glasses, at a proper reading distance,—Jaeger 1 is a small reading type at about an angle of 13 inches
246 from the eye—for five minutes. It is a small type for reading at normal distance. Jaeger No. 1 would probably be a little smaller than newspaper, than the ordinary newspaper type.

Assuming further that, on August 15, 1934, the muscle balance was well within normal limits and that diplopia is not present in any field—diplopia is seeing two objects.

Assuming further that the fields of vision were not altered, and there was no enlargement of the physiological blind spots; the fundus examination showed no pathology. The term "fundus examination showed no pathology", means that it showed no injury at that time; that is, August 15, 1934. (Tr. pp. 555, 556.)

Assuming further that the nerve head was normal in appearance; there was no evidence of hemorrhage, recent inflammatory changes or scars. The anterior segment of the eye was normal, and that Captain Hellweg called the attention of the examining physician to a hyperemic area over the right temple, extending forward over the parietal region. There was found a skin eruption over this area. Witness answered: This hyperemic area is a little red spot on the side of the head. That is what I mean by that term, in medicine. The parietal region is up on the side of the head (indicating).

Assuming that this examination on August 15, 1934, revealed no pathology which might be attributed to the accident which he described as having happened on June 6,

1934; assuming the facts narrated in the question to you as having been present when this examination was made on August 15, 1934, which was a little more than two months after the injury he described to you, would you still
247 say that the condition which you found on October 1, 1937, was due to the lightning stroke which he received on June 6, 1934, my answer is: I could say. From the history he gave me, and on my findings, I would say, yes. (Tr. pp. 556, 557.)

Assuming that these conditions were present upon examination of this man on August 15, 1934; taking those as facts, as revealed by an examination, namely, that there was no diplopia or double vision; that the fields of vision were not altered, and that there was no enlargement of the physiological blind spot; that the fundus examination showed no pathology; the nerve head was normal in appearance, and there was no evidence of hemorrhage or recent inflammatory changes or scars; and that the anterior segment of the eye was normal; taking those things as facts which have just been read to me as revealed upon an examination of this man on August 15, 1934, in my opinion as a medical man, I would still say that the conditions which I found upon my examination on October 1, 1937, were due to the lightning stroke he received on June 6, 1934. This condition which I found was due to the injury received on June 6, 1934. (Tr. pp. 567, 568.)

If he had received this injury on June 6, 1934, the muscle balance may or may not have been within normal limits when he was examined on August 15, 1934. If he had received that injury, the muscle balance would be well within normal limits. After this injury, when he was examined on August 15, 1934, and the muscle balance was well within normal limits, I would say that the muscle balance would be well within normal limits at this point, after the
248 accident, if he had received such an injury such as I have been speaking about. I told you a while ago that if this man had an injury of the kind I have testified about, that the evidences of injury could manifest themselves within a day or two after the injury. I can not say positively that it would not. (Tr. p. 568.) I can not say positively that it would not. I can not say one way or the other. If he had received an injury to his eye, I would ex-

pect, within two months of the time he received that injury, to find that the muscle balance was abnormal rather than within normal limits. (Tr. p. 569.)

Based upon the same set of facts as to the injury he had received, if he was examined on August 15, 1934, I would not expect, if he had an injury to the eye, that diplopia or double vision would be present, not altogether. I would say no. If diplopia was due to injury, it would not, every time, manifest itself within two months after the receipt of the injury. If a man receives an injury which produces double vision or diplopia, I would expect it to be a dormant thing, and to lie at rest for a long time, and then manifest itself sometime later. (Tr. p. 570.) It would manifest itself within a year. As to whether it would manifest itself within two months, I have answered the question by saying it could. As a medical man, I would not say that it would not. If I found any evidence of diplopia within two months after the injury, I would not say that he received an injury causing a condition of that kind. I told you awhile ago that I would expect this double vision to be manifested within a
year of the receipt of the injury. It could be within
249 two months. As a medical man, I would not expect
to find it within two months of the injury. I think
it would lie dormant for a period longer than two months. I give that as my opinion, as a medical man. (Tr. p. 571.)

Assuming that, upon examination of this gentleman on August 15, 1934, it was found that the field of vision was not altered, and there was no enlargement of the physiological blind spots, I would say that he had received an injury to the optic nerve on June 6, 1934. The physiological blind spot is something that is normally there. In this case, I found that the physiological blind spot had been enlarged. Assuming that this gentleman had received the injury on June 6, 1934, if there had been an injury to the eye, which would cause an enlargement of the physiological blind spot, I probably would expect to find it on my examination on August 15, 1934. I think that is the best answer I can give. I can not answer with any more certainty than "Probably". (Tr. p. 572.)

Assuming that on August 15, 1934, there was no enlargement of the physiological blind spot, I would still say that he had an injury on June 6, 1934, which injured the optic nerve. I can say that because the enlargement of the blind spot had not progressed; the injury had not progressed. If there was some enlargement of the blind spot, I would probably expect to find that, I said. It might be some. That is the best answer I can give.

The fundus is the background of the eye, as I may
250 put it; that part covered by the retina. If upon examination of this man on August 15, 1934, the fundus showed no pathology, that would not indicate that there had been no injury to the eye on June 6, 1934. If he had some pathological condition of the fundus, due to the injury received on June 6, 1934, it may be that it would be manifested within two months after that. I don't know. (Tr. p. 573.) I can not say.

Assuming that the examination on August 15, 1934, showed that the head of the optic nerve was normal in appearance, I would say that that would not be an indication that there was no injury to the optic nerve. This photograph (Plaintiff's Exhibit No. 23), on which witness pointed out to the jury the optic nerve, that shows the optic nerve as it appears (indicating) and comes into the eye. That is the head of the nerve. If this gentleman was injured on June 6, 1934, and had an injury to the optic nerve, it may be that you would expect to find the head of the optic nerve normal on August 15, 1934. By that, I mean, from the appearance, looking at it. That is the best answer I can make. If you found the head of the optic nerve to be normal, on an examination on August 15, 1934, that would not indicate to me as a medical man that there had been no injury to it on June 6, 1934. As to whether it would indicate anything to me, one way or the other, it would indicate that I would watch it. I would want to make a further examination and watch it. (Tr. pp. 574, 575.)

If a man received an injury to the optic nerve on June 6, 1934, and I examined him on August 15, 1934, I
251 would expect to find some evidence of injury to the optic nerve then, but I don't say I would find it. If I didn't find it, I absolutely would not conclude, as a medical man, that there had been no injury to the optic nerve some two months before that. I mean to say that if a man had an accident such as was described to me, which caused an injury to the optic nerve, yet, on August 15, 1934, or two

months afterwards, I would find the optic nerve to be normal by appearance. That is the only way I would expect to find it, by appearance, and subjective signs, fields and blind spots. Appearance is not the best evidence always. The objective evidence is always better than the subjective evidence. (Tr. p. 575.) I take the two together. One thing is what the patient explains, and the other is what I see. I see the physical thing, and what the patient tells me, of course, I have to believe what he tells me. Eliminating the subjective symptoms, the only way you can tell the condition is by the physical examination which is objective. (Tr. p. 576.) If I had examined this man on August 15, 1934, and found the optic nerve to be normal, I would not say that there had been no injury to it. I would have to have the objective and the subjective findings.

Thereupon, the following occurred:

"By the Court:

"Q. Let me ask you a question: If you examined this man on August 15, 1934, without having any history of having been struck by lightning, what would you have said when you found conditions as they were existing?
252 A. I had a history.

"Q. No, I am not talking about any history. I say, if you had examined this man on August 15, just walked in at that time and you found conditions as they existed, what would you say about that? Would you say he was normal? A. I would say normal."

Thereupon, on redirect examination, the witness further testified: On cross-examination, I testified that, as a man grew older, his eyes were affected. I thought Captain Hellweg's left eye was perfectly normal at the time I examined it, and he was just as old in that left eye as he was in the right eye, at that time. On cross-examination, I testified that when I examined Captain Hellweg, he told me he had been trying to get glasses for the last few years. I did not give Captain Hellweg any treatment. I prescribed glasses. He did not ask me to give him any treatment for his eyes. (Tr. p. 578.)

I would say that there is no known treatment for an optic nerve in the condition that I found it. When I prescribed glasses, that corrected his vision in so far as the use of the glasses was concerned. Glasses do not actually correct vision so that one can dispense with the use of glasses under the conditions as I found them to exist in Captain Hellweg's right eye.

Thereupon, on recross-examination, the witness further testified: If his left eye is normal, and he has some trouble with his right eye, he could not all the time read without
glasses. If a man had a refraction in the right eye,
253 and the left eye was normal, he could not still read
without glasses. I do not mean to say that a one-eyed man can not read without glasses. If he had a refraction area, he would have to have glasses. If the left eye is normal, it would have a greater distant and near vision, at a certain age. He could have it. When I say a thing is normal, I mean normal. After 45—up to 45—the eye is normal, and then there is a physiological change which takes place, and you have to supply reading glasses. That is, after 45 years of age, the physiological change takes place. That is the normal condition, as you advance in years, and you have to wear glasses to correct that. I said awhile ago that a man's age had nothing to do with his vision, not with pathological vision. We have physiological changes. As a man grows older, from 45 on, he has to use glasses to read, where he could read before without glasses. (Tr. pp. 580, 581.)

Whereupon, further to maintain the issues on his part joined, plaintiff called as a witness **Dr. George Barnett Trible**, who, after having been duly sworn, testified as follows: My full name is George Barnett Trible. I graduated in the Washington School of Medicine at St. Louis, Missouri, I took post graduate courses in that Medical School, and at the University of Vienna, the New York Post Graduate University, and Pennsylvania Medical School, receiving from these universities the degree of M. D. I have been practicing medicine since 1906. I belong to various medical societies. (Tr. p. 582.)

I was a medical officer in the United States Navy
254 from the latter part of 1907 to the first part of 1922.
I have specialized in eye, nose and throat, and later, ear, nose and throat, since 1910. I did eye, ear, nose and throat in the United States Navy. For about ten years I have confine my work to that of nose, ear and throat. I

know Captain Julius F. Hellweg. (Tr. p. 583.) I think I have known him about 20 years or more. I have had occasion to treat him from time to time, and the members of his family. In February, 1935, Captain Hellweg came to me and gave me a history of an injury as a result of lightning shock or electric shock. At that time he complained of deafness in his right ear, a sensation of buzzing which we technically call tinnitus, and that he also had at that time some headaches and disturbance of his vision, but I was not doing eye work at that time. I made an examination of both of his ears. I made an examination at that time. (Tr. p. 384.)

I made an examination which disclosed a marked impairment of hearing of his right ear. That examination was made on February 4, 1935. The ear drum at that time showed no evidence of any disease. An illumination of the sinuses disclosed a deflected septum. That is a bone of the nose. That does not have any effect on the hearing, so far as the nerve is concerned. It does in some cases have an effect on the middle ear condition. (Tr. p. 586.)

Witness described the various tests which he made. (Tr. pp. 587, 588 and 389.) As a result of these examinations I found a condition of nerve deafness in the right ear. (Tr.
p. 590.) The nerve which was affected in the Cap-
255 tain's right was the auditory nerve, at least a part
of the auditory nerve, which is also known as the
eighth nerve. The part which was affected was that which transmits the sensation of hearing. (Tr. pp. 591, 592.) There is no cure for that condition. There is always a tendency to progress. It progresses by probably atrophy of the fibres or atrophy of the cells. Atrophy is a wasting away. (Tr. p. 592.) Atrophy of the nerve, or nerve deafness, can be caused by an electrical or lightning shock. (Tr. p. 593.)

I made another examination of the Captain's ears on the first of October, 1937. (Tr. p. 594.)

I made the same examination as I had made before. My recollection is that the findings then were just about the same as on the previous examination. There was nerve deafness. (Tr. p. 595.)

I made a chart when I made the examination on October 1, 1937. It discloses relatively the same findings as on the previous examination, a lowering of the entire range on his right ear. As a result of my examinations in 1935, and again on October 1, 1937, I found that the captain had lost two-thirds of the hearing in his right ear. (Tr. p. 596.)

At the time I examined Captain Hellweg, in 1935, he gave me a history of the occurrence in 1934, that he had some electrical disturbance, a sudden flash like an explosion occurred, and immediately following that he had a sensation of deafness. In my opinion, I do say that the shock caused the condition from which he is suffering. (Tr. p. 598.)

256 I made another examination of Captain Hellweg on February 28, 1938. My findings on that date with reference to the right ear were that the hearing had not improved any; if anything, it had deteriorated. (Tr. p. 599.)

Thereupon, on cross-examination, the witness further testified: When I first saw Captain Hellweg on February 4, 1935, he gave me a history of having had something happen to him on June 6, 1934. The history he gave was that he picked up the telephone, or he telephoned, during an electrical disturbance, while on duty at the Naval Observatory. During the course of this telephoning, he felt a blinding flash and a shock like an explosion. (Tr. p. 601.) He said, following that, his ear bothered him. He did not say it knocked him down. He told me that he naturally lunged back. He said he was sitting at the time it happened, as I recall. (Tr. p. 602.)

If you had a blow on the side of your head, caused by electricity, due to lightning, that would not be just like hitting you on the side of your head with the fist. (Tr. p. 604.) A shock such as this is transmitted along the nerve fibres. When people are killed by electrocution, it is a shock to the nerve fibres. It is not in the nature of a blow, not necessarily. I can not agree that it is a recognized fact in medicine that an injury of that kind is commonly referred to as a blow. An electric shock due to lightning does not generally have an effect upon the drum of the ear; I am positive of that. (Tr. p. 605.)

257 If you had an electric shock due to lightning, received on June 6, 1934, if there was any injury to this auditory nerve, as to when you would expect to have that injury manifested, you would have the first injury

then, that is, the shock of sensory nerves acting according to the sensation that occurred. If you have an optic nerve and you strike it, you get a flash of light. If you injure the auditory nerve you have a sensation of sound. You would not expect an atrophy from the injury to come on until later. This atrophy would be something that would come on in the course of time, and would not be manifested immediately. If you had an injury to the nerve, due to this electric shock, the hearing would be affected immediately, temporarily, and then the atrophy comes on and it gets permanent. (Tr. p. 606.) If the hearing defect proceeds and gets worse, after six months, we feel it is permanent. We have the same thing in other shocks. If you had a blow or shock that caused injury to the eighth nerve, that injury would be caused at that time, temporarily. That is when he would be injured, and the injury would affect his hearing at the moment. The hearing may clear up and be unimpaired, but it would be impaired afterwards. (Tr. p. 607.)

The function of the nerve is to conduct sound. We can have temporary deafness from a loud noise which clears up. That is due to an injury to the nerve. (Tr. p. 608.)

Whereupon, the plaintiff, further to maintain the issues on his part joined, read in evidence the deposition of **Dr. Stephen G. Rothwell**, which was taken March 18, 1938, at the office of Dr. Rothwell in New Bedford, Massachusetts. He, after having been duly sworn by the Notary Public, testified as follows: (Page references are to pages of
258 the deposition.) My full name is Stephen G. Rothwell. I have been practicing medicine in Massachusetts since 1925. I graduated from the University of Colorado, in 1917, receiving the degree of Doctor of Medicine. I was an interne in the Massachusetts Eye and Ear Infirmary, in Boston, for twenty months. I have specialized in the treatment of eye, ear, nose and throat, since 1925. I have treated thousands of cases of nerve deafness. (Pp. 2, 3.)

I made an examination of Captain Hellweg's ears on September 8, 1934, at my office in New Bedford, Massachusetts. (P. 3) I found that Captain Hellweg was suffering from nerve deafness of the right ear. I found that the hearing in Captain Hellweg's right ear was greatly reduced, he having lost approximately two-thirds of the hearing in that ear, whereas the opposite hear, the hearing was normal. I used tuning forks to ascertain what type of deafness the Captain suffered with. (P. 4.) I also tested his hearing to determine at what distances he could hear whispered voice. (P. 5.) I found that the air conduction of the right ear was diminished. (P. 6.)

Captain Hellweg gave me a history, that a few months previously while using a telephone line, the line was struck by lightning, and he received, as he said, a bat in the right ear. He said it was extremely painful at the moment, made him violently dizzy, and then he was practically knocked out. (pp. 7, 8.)

From the history given by Captain Hellweg and from findings as the result of the examination I made on September 8, 1934, in my opinion that injury was caused by
259 Captain Hellweg being struck by lightning, as he explained to me. In my opinion, the injury that I found to the right ear is permanent and I believe that the condition will become progressively worse. That is the only time I examined Captain Hellweg. (P. 9.)

There is nothing known to medical science which will cure that condition or tend to cure it. In an injury of this kind, some months should elapse before you get deafness, the condition as nerve deafness. It can not be determined immediately after the injury. (P. 10.)

Thereupon, on cross-examination, the witness further testified: I made an examination of Captain Hellweg on September 8, 1934, at my office. The examination covered approximately 45 minutes. That was the only time I examined him. (P. 27.) At that time, he gave me the history, that a few months ago while using the telephone line, he was struck by lightning and received a bat in the right ear. This was painful in the extreme, at the moment. Now says his family does not think he hears so well. (P. 28.) He did not tell me that he had gone to the Naval Dispensary, the day following this accident, and that an examination was made but that there was no evidence of any impairment in the hearing at that time. He did tell me when he first observed the impairment of hearing. It was when his family sent him to me to be examined. It was his family that noticed he did not hear. I believe his family was visiting at Martha's Vineyard at that time. P. 32.) He told me that his family was visiting up in this locality, and they

260 made some such observation, that they did not think he heard so well, and for that reason he came to see me. (P. 33.) I did not find any evidence about the ear, itself, other than a partial loss of hearing, and that was purely subjective. I did not find any evidence of physical injury to the nerves. There would be no way to find such an injury while a person was alive. I found loss of hearing. (P. 37.)

Thereupon, at the conclusion of the foregoing testimony, plaintiff announced his case closed. Whereupon, counsel for the defendant moved the Court to instruct the jury to return a verdict for the defendant, on the ground that there is no evidence in the case of negligence of the defendant, which the Court could submit to the jury, and upon which the jury, under the law, could make a finding that the defendant was guilty of negligence in causing the injury complained of by the plaintiff in this case.

Thereupon, counsel for the plaintiff and counsel for the defendant, respectively, argued to the Court in support of and in opposition to said motion.

Whereupon, at the conclusion of the arguments, the Court instructed the jury as follows:

"The Court: Ladies and gentlemen of the jury, I have been listening to a motion made by the defendant asking me to direct this jury to return a verdict in favor of the defendant. Those motions are frequently made and when made challenge the judgment of the Court.

"You have heard this evidence. It appears that Captain Hellweg, the plaintiff, was undertaking to put
261 through a telephone call and he received a shock which caused him to sustain the injuries which you have heard about.

"At that time, while he was listening to the telephone, there was an electric display with lightning about it, and the assumption is, of course, that the lightning apparently got on the telephone wires in some manner and thereby caused that blue flame to hit the Captain's ear and caused these injuries.

"Of course, lightning is an act of God. No human being can control that, and when an act of God becomes the sole cause of an injury to another no one can be held responsible for that.

"The plaintiff has undertaken to prove certain specific acts of negligence on the part of this defendant as to the manner in which this telephone system was installed and maintained. He relies on the testimony of Colonel Simpson and Colonel Simpson has testified—I am speaking generally—that the Telephone Company failed to use a protector. That was a porcelain device which was introduced in evidence which had two fuses. Also that it failed to use a helix. This was that circular wire thing which I think you saw on the board which kept out the lightning. Also that the Telephone Company failed to insulate certain wires put there in the attic with this porcelain tubing and also to use this material called loom for insulation purposes. Loom, as you recall, is a fabric impregnated with asphalt or some other material or insulation. I think I have covered the various things.

262 Now, the duty of this defendant Telephone Company was not that of an insurer. It was not required to exercise the highest degree of care in the manner in which it installed and maintained this telephone equipment at the Naval Observatory. It was called upon to use the care that an ordinarily prudent company would have exercised under the same circumstances, and that is that they would make use of and install the well known and approved appliances customarily used under the same circumstances by telephone people.

The Colonel as a witness gave his personal opinion that they should have used a protector block, as I recall the testimony he said that should be used near the desk where the telephone is, where the subscriber sat, and yet on cross examination he frankly admitted that that never was done by The Telephone Company and under such circumstances as existed at the Naval Observatory. He also talked about this helix coil, but he says that was never used on a subscriber's equipment or in a situation like that at the Naval Observatory, and that was also true of his testimony with regard to these particular porcelain tubes. In other words, he expressed his opinion that this and that should have been done, but he does not testify that this defendant here failed to use the well known and approved appliances which were customarily used under the circumstances existing here.

"So, therefore, the attempts on the part of this plaintiff to prove specific acts of negligence on the part of this defendant have failed, and it leaves us only with the fact of the lightning, and so far as you and I know that was
263 the sole cause of this unfortunate accident to Captain Hellweg. There is no proof of any specific act of negligence which concurred and cooperated with the lightning to produce the injury complained of.

"So, with that situation before us, with an act of God established, there is nobody to say that it was not the sole cause of this thing, and the burden being upon the plaintiff to prove his case by a preponderance of the evidence, I find there is a failure of proof of negligence here, and your verdict must be for the defendant, and I therefore direct that that be your verdict."

Thereupon, plaintiff, then and there, duly noted an exception to the ruling of the Court in instructing the jury to return a verdict for the defendant, and prayed the Court to note the allowance of such exception upon its minutes, which accordingly was done.

Whereupon, the jury returned a verdict for the defendant by direction of the Court.

AND, BE IT FURTHER REMEMBERED, that the foregoing contains the substance of all of the evidence given on the trial, and whenever in the aforesaid statement of the testimoney given by the witness on the trial of this cause, the same is set forth in the question and answer form, rather than in the narrative form, same was so stated and is so included, this course was deemed necessary in order that it might be properly stated in this statement of testimony; and each of the exceptions stated to have been taken by counsel for the plaintiff, Julius F. Hellweg, was so
264 taken and was duly allowed by the Court and entered upon its minutes, before the jury rendered its verdict by direction of the Court; and in order that all, and each and every thereof, may be preserved, and made of record in this cause, this statement of testimony is duly signed,

approved and ordered to be made of record in the above-entitled cause, this 17th day of October, 1938.

By the Court:

O R LUHRING
Justice.

The foregoing narrative statement of testimony is agreed to this 17th day of October, 1938.

HARRY H. BETTELMAN
H. MAX AMMERMAN
per HHB.
Attorneys for Plaintiff.

GEO. P. HOOVER
Attorney for Defendant.

Endorsed on Cover: No. 7266. Hellweg, Appellant, vs. Chesapeake & Potomac Telephone Co. United States Court of Appeals for the District of Columbia Filed Oct 22 1938 Joseph W. Stewart, Clerk.

IN THE

United States Court of Appeals
FOR THE DISTRICT OF COLUMBIA.

October Term, 1938.

No. 7266.

Julius F. Hellweg, *Appellant*,

v.

Chesapeake & Potomac Telephone Company, A Corp.,
Appellee.

BRIEF FOR APPELLANT.

Harry H. Bettelman,
H. Max Ammerman,
Attorneys for Appellant.

Press of Byron S. Adams, Washington, D. C.

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IN THE

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA.

October Term, 1938.

No. 7266.

Julius F. Hellweg, *Appellant*,

v.

Chesapeake & Potomac Telephone Company, A Corp.,
Appellee.

BRIEF FOR APPELLANT.

STATEMENT OF CASE.

This case is one of first impression in this jurisdiction and involves an appeal from the District Court of the United States for the District of Columbia on a judgment entered upon a verdict directed against the plaintiff at the close of the plaintiff's case (R. 11).

An action was brought by the plaintiff, Captain Julius F. Hellweg, director of the Naval Observatory in Washington, D. C., against the defendant, Chesapeake and Potomac Telephone Company for personal injuries sustained by the plaintiff as a result of lightning coming from the receiver of a telephone instrument owned by the defendant, caused by the negligence of the defendant (R. 1, 2, 3, 4, and 5). By its pleas, the defendant denied that the injuries sustained by the plaintiff were caused by any negligence on its part, but admitted that it owned, maintained and controlled the operation of the telephone system and the telephone instruments at the United States Naval Observatory.

The declaration filed herein was in two counts, one charging the defendant with general negligence in failing to exercise ordinary care and diligence in keeping its telephones, wires, and apparati in a safe condition (R. 4), the second count charging the defendant with general negligence in failing to exercise the highest degree of care in keeping its telephones, wires and apparati in safe condition (R. 2).

The plaintiff and his witnesses introduced evidence tending to show that on June 6, 1934, the plaintiff was using his telephone while in his office at the U. S. Naval Observatory (R. 21, 57, and 68). A thunder and lightning storm was in progress (R. 58, 59, 61, 70, and 71), and while the receiver of the telephone was at a distance of from two to four inches from the plaintiff's ear (R. 57), a blue flame came from the telephone receiver and struck the plaintiff in the ear (R. 18, 19, 21, 22, 58, 67, 68, and 75), and that the side of his head immediately became red (R. 58, 68). Further evidence was introduced showing that within a short period of time immediately following the lightning which came from the telephone receiver and struck him, the plaintiff attempted to use the telephone, but had difficulty in getting connected with his own switchboard, located in the United States Naval Observatory, and the telephone central (R. 23 and 24). At the time the plaintiff was using the telephone, his telephone line was connected through the defendant's central exchange (R. 78), and he was talking to a Mrs. Alderman who was at her home located about ten blocks from the Naval Observatory (R. 21, 98 & 99). While connected through the telephone company's exchange, several signal lights on the switchboard, including the signal light for the plaintiff's telephone line which was in use, all suddenly lit up simultaneously and a crashing, rattling noise like the tearing of canvas emanated from the switchboard in the Naval Observatory although none of the other lines at the Naval Observatory were in use at the moment (R. 79).

Expert evidence was introduced showing that the lighting up of the signal lamps on the switchboard was caused by excessive current coming into the switchboard (R. 92, 98, 121, 122 and 152) and through the telephone wiring (R. 92). Evidence was introduced that sheet copper was used in the construction of the roof of the U. S. Naval Observatory and that the roof is laid on steel I-beams which rest on the brick walls of the building. These beams are exposed in the attic-way of the Observatory within a short distance of the telephone wires (R. 102). These beams are conductors of electricity (R. 118). They come into contact with the roof and are attached to it only through pipe hangers and pipes (R. 103). Further expert evidence was introduced showing that there were known and approved devices and appliances which would prevent foreign currents of electricity or lightning from entering and coming over a telephone line and telephone equipment and that such known and approved devices and appliances were not used by the defendant on its telephone lines in the Observatory (R. 117, 118, 119, 120, and 121); that electricity is a dangerous instrumentality unless it is properly controlled and that if these wires in the Naval Observatory had been properly insulated, the lightning would have been controlled (R. 117, and 122): that the telephone company did not use proper insulation along the exposed steel I-beams where the telephone wires ran parallel with them at a distance of but two inches from the beams (R. 119); that telephone people have been able to find some system whereby 99 per cent of the time they could protect telephone users from lightning (R. 122); that electric science has progressed to the extent that lightning can be controlled (R. 124). The telephone system was not properly grounded (R. 120 and 133). The blue flame which came from the telephone receiver was static electricity of about 100,000 voltage (R. 150). The lighting up of the signal lamps of the switchboard and the rattling noise coming from the switchboard were caused by some foreign current being introduced into the switchboard at the moment. (R. 92, 98, 121, 122 and 152). One hundred thousand volts coming through the telephone system at the Observatory could damage the telephone, but not beyond use (R. 154). The arc of blue flame which came from the telephone receiver and struck the plaintiff in the ear was caused by a heavy discharge of electrical current which was incidental to the lightning getting on the telephone line (R. 154). There was little amperage in the current which struck the plaintiff (R. 155). This whole occurrence was put in motion by the lightning (R. 158).

Evidence was introduced showing that the plaintiff was permanently injured as a result of this lightning coming from the telephone receiver (R. 163, 165, 178, 179, and 181).

Upon the conclusion of the plaintiff's case, the defendant moved for a directed verdict which was granted (R. 10). The plaintiff filed a motion for a new trial (R. 10 and 11), which was overruled (R. 11), and judgment was entered on the verdict against the plaintiff (R. 11). From that judgment an appeal was made to this Court (R. 11).

The foregoing statement of facts is general in nature. Where deemed necessary in the argument more detailed facts are therein set forth.

ASSIGNMENT OF ERRORS.

1. Error of the Court in directing the jury to return a verdict for the defendant;

2. Error of the Court in ruling as a matter of law that the plaintiff's injury was caused by an act of God;

3. Error of the Court in ruling as a matter of fact and law that lightning was the sole cause of the injury to the plaintiff;

4. Error of the Court in ruling as a matter of law that the applicable test of the degree of care to be exercised by the defendant to be applied herein was whether the defendant used the standard equipment used by other companies engaged in business similar to that of the defendant;

5. Error of the Court in ruling as a matter of law that the defendant was not negligent in failing to use certain existing known and approved safety appliances which were not used by other telephone companies;

6. Error of the Court in ruling as a matter of law that the doctrine of *res ipsa loquitur* was inapplicable under the evidence;

7. Error of the Court in ruling, (a) that the evidence adduced failed to establish specific acts of negligence; and (b), that having undertaken to establish specific negligence and failing to establish same, the plaintiff was precluded from relying on the doctrine of *res ipsa loquitur;*

8. Error of the Court in ruling that the defendant was not required to exercise the highest degree of care in the manner in which it installed and maintained its telephone equipment at the Naval Observatory;

9. Error of the Court in ruling that there was no proof of any specific act of negligence which cooperated with the lightning to produce the injury to the plaintiff;

10. Error of the Court in ruling as a matter of law that there was a failure of proof of negligence on the part of the defendant.

This case presents the following:

QUESTIONS OF LAW.

I. Did the plaintiff, as a matter of law, prove specific acts of negligence on the part of the defendant, sufficient to warrant the submission of the case to the jury?

II. Upon the ruling of the Court below that there was a failure of proof of specific acts of negligence of the defendant, could the plaintiff then rely upon the doctrine of *res ipsa loquitur*, as pleaded in his declaration, and have the case submitted to the jury on this doctrine?

III. Was the plaintiff's injury caused solely by an act of God, or by an act of God concurring with an act of negligence of the defendant?

ARGUMENT.

I. Did the plaintiff, as a matter of law, prove specific acts of negligence on the part of the defendant, sufficient to warrant the submission of the case to the jury?

Assignment of Errors Nos. 1, 4, 5, 7a, 8, 9, and 10 are contained in the discussion of the foregoing point.

A. The first proposition of law to be determined is the duty and degree of care chargeable to telephone companies relative to preventing foreign currents, including atmospheric charges of electricity, from coming over and through their telephone wires and equipment.

The courts throughout the United States have uniformly held as stated in *Griffith* v. *New England Telephone & Telegraph Co.*, 72 Vt. 441, 48 Atl. 643 (1900):

> "Telephone companies are required to exercise ordinary care to use those 'known and approved appliances and devices that are reasonably necessary to prevent foreign currents, including charges of atmospheric electricity, from coming over their wires and equipment so as to prevent injury to persons and property'; and failure to use those known and approved devices and appliances

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> so designed as to prevent foreign currents and atmospheric charges of electricity from passing through their wires and equipment constitutes negligence.''

Western Telephone Corp. of Texas v. *McCann et al.*, 69 S. W. 2d, 465, (Texas 1934); *Lynch* v. *Carolina Telephone & Telegraph Co.*, 204 N. C. 252, 167 S. E. 847 (1933); *Southwestern Bell Telephone Co.* v. *McAdoo*, 10 S. W. (2d) 503, (Ark. 1928); *Cohen & Stryck* v. *Home Telephone Co.*, 179 Ky. 107, 200 S. W. 344 (1918); *Peninsular Telephone Co.* v. *McCaskill*, 64 Fla. 420, 60 So. 338, (1913); *Texas Telegraph & Telephone Co.* v. *Scott*, 60 Tex. Civ. App. 39, 127 S. W., 587 (1910); *Southern Telegraph & Telephone Co.* v. *Evans*, 54 Tex. Civ. App. 63, 116 S. W. 418 (1909); *Southwestern Telegraph & Telephone Co.* v. *Abeles*, 94 Ark. 254, 126 S. W. 724 (1910); *Evans* v. *Eastern Kentucky Telephone & Telegraph Co.*, 124 Ky. 620, 99 S. W. 936 (1907); *Wells* v. *Northeastern Telephone Co.*, 64 Atl. 648, (Maine 1906); *Southern Bell Telephone & Telegraph Co.* v. *McTyer*, 137 Ala. 601, 34 So. 1020 (1903); *Jackson* v. *Wisconsin Telephone Co.*, 88 Wis. 243, 60 N. W. 430, (1894).

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Some courts have even extended the doctrine to include the highest degree of care:

> ''Telephone companies must exercise the highest degree of care to use known and approved appliances and devices that will prevent foreign currents and atmospheric charges of electricity from coming over their telephone lines and equipment so as to prevent injury to persons and property.'' Delahunt v. United Telephone & Telegraph Co., 215 Pa. 241, 64 Atl. 515, (1906)

Joyce v. *Mo. & Kansas Telephone Co.*, 211 S. W. 900, (Mo. 1918);

Warren v. *Mo. & Kansas Telephone Co.*, 196 S. W. 1030, (Mo. 1917).

The case most frequently cited on the subject of the duty and degree of care is that of *Griffith* v. *New England Telephone & Telegraph Co.* (*supra*). In that case, plaintiff's intestate, Dr. Sawyer, was killed by lightning while sitting in his house under a telephone instrument owned and maintained by the defendant telephone company. The plaintiff claimed that the lightning came to and entered the house over defendant's telephone wire and that the defendant was negligent in that it did not maintain any appliances or devices to conduct the lightning to the ground or out of the house. The court held:

> "In view of these facts and others that will be herein referred to, it is clear that the business of maintaining and operating a telephone line is one that required special knowledge and skill in the construction, inspection and repair of the line and instrument, and in the use of known and approved devices, *if any there be*, to guard against harmful effects to persons and property from electricity which may be conducted over the line and into the instruments. * * * * Having undertaken to place and maintain the instrument in the house, and connect it with its telephone line for the use of the deceased, in so doing it was under a duty to exercise the care of a prudent man in like circumstances. If, while in the exercise of such care, it has reasonable grounds to apprehend that lightning would be conducted over its wires to and into the house, and there do injury to persons or property, and there were *known and approved devices for arresting or dividing such lightning* so as to prevent injury therefrom to the house or the persons therein, *then it was the defendant's duty to exercise due care in selecting, placing, and maintaining*, in connection with its wires and equipment, *such known and approved appliances as were reasonably necessary to guard against accidents* that might

> fairly be expected to occur from lightning when conducted to and into the house over its telephone wires.'' (Italics in all quotations have been supplied.)

If the evidence in the instant case tended to prove that there were known and approved appliances and devices which would have prevented this discharge of lightning or electricity from coming over and through the defendant's telephone lines, but that the defendant failed to use and employ such devices and appliances, then it is apparent, in view of the decisions in the foregoing cases, that the defendant would be negligent. In this connection it must be remembered that Colonel Simpson, plaintiff's electrical and telephony expert, testified that there were several known and approved appliances and devices that were designed to prevent atmospheric discharges and foreign currents of electricity from entering the lines of the defendant telephone company at the U. S. Naval Observatory; that there also were known and approved appliances and devices designed to divert and diffuse atmospheric discharges and foreign currents of electricity which may have entered defendant's telephone lines, so as to render them harmless, none of which were used or employed by the defendant on its lines and equipment at the U. S. Naval Observatory prior to the time of the accident; that in his opinion as an expert, these certain known and approved devices and appliances should have been used in connection with the installation and maintenance of defendant's lines and equipment in order to prevent injury to persons and property from discharges of atmospheric electricity or foreign currents at the U. S. Naval Observatory. Among those known and approved devices and appliances which should have been used were porcelain tubing, protector blocks, helix or choke coils, loom insulation, and grounding of the telephone system, and these should have been used at the U. S. Naval Observatory to prevent injury to persons or property from lightning or foreign current. His testimony tended to show:

> 1. The defendant failed to use *porcelain tubing* as additional insulation for the telephone wiring where such wiring passed near conductors of electricity, namely, in the instant case, the exposed steel I-Beams in the attic of the Naval Observatory which I-Beams were in direct contact with the copper roof of the Observatory (R. 116-119, 136, 140), and that copper is one of the best known conductors of electricity (R. 136, 137).
>
> 2. The defendant failed to use *protector blacks* which should have been installed as closely as possible to the telephone set on the plaintiff's desk (R. 117-118, 141, 143).
>
> 3. The defendant failed to use *helix* or *choke coils* which should have been attached to and become a part of the telephone wiring (R. 119, 144, 156).
>
> 4. The defendant failed to use *loom insulation* on telephone wires where such wires were in contact or in proximity with steam pipes, water pipes and other conductors of electricity (R. 121, 150).
>
> 5. The defendant failed to properly ground its entire telephone system at the Naval Observatory (R. 120, 124, 133, 134, 136, 137).

In the case of *Western Telephone Corporation* v. *McCann. (supra)*, the evidence tended to show that a drop wire attached to appellee's home was disconnected and not in service, but attached to a pole on the outside of his house and tied to a porcelain glass insulator carrying the local telephone wire; that lightning struck another pole about 180 feet distant from the one to which the drop wire was attached, the insulator was damaged and Mrs. McCann was found injured on the floor. The court held:

> "The appellant was bound to know the potential dangers of its wires *wherever placed*, and to use ordinary care to safeguard persons and property from those dangers. It was bound to know that the drop wire attached to the McCann home was a potential carrier of electrical current *generated by lightning*, which might occur at any time, and that in such contingency it might result in the very injury complained of in this case. With this knowledge appellant was under the duty to use ordinary care to equip its exposed wire with such known devices as would prevent or minimize that danger to any lawful occupants of the house. It was undisputed that the only known safeguards against such dangers, other than actual removal of the wire, were to "ground it" or equip it with a "lightning arrester."

The telephone company, in the instant case, was chargeable with knowledge of the potential dangers of electricity generated by lightning or other cause, coming over and through its wires and equipment at the Naval Observatory, especially where their wires were installed and strung near conductors of electricity. As heretofore stated, the evidence tended to show that the defendant's telephone wires were placed near and close to exposed steel I-beams which were attached to the copper roof of the Naval Observatory, and that copper is one of the best known conductors of electricity; that the defendant failed to use many other known and approved devices to prevent foreign currents and atmospheric discharges of electricity from entering upon and coming through its telephone wires and equipment. Therefore, the defendant, being chargeable with the knowledge of the potential danger of lightning and foreign currents coming upon its telephone lines, was negligent in failing to provide those known and approved devices and appliances that were reasonably necessary to prevent foreign currents and atmospheric discharges of electricity from entering upon or passing over its lines and equipment.

In directing a verdict in favor of the defendant, the trial court ruled:

> "It (defendant telephone company) was called upon to use the care that an ordinarily prudent company would have exercised under the same circumstances, and that is that they would make use of and install the well known and approved appliances *customarily used under the same circumstances by telephone people.*" (R. 183.)

In the light of the authorities heretofore cited, the test of the duty of the defendant to use the well known and approved appliances "*customarily* used under the same circumstances by telephone people," as stated by the trial court in the instant case, is obviously erroneous. The *true test* as heretofore shown by the authorities who have considered this issue, is that telephone companies are required to use *those known and approved appliances and devices which are reasonably necessary* to prevent atmospheric discharges and foreign currents of electricity from entering, as well as passing over their telephone lines and equipment so as not to injure persons or property. Having shown by competent, uncontradicted evidence that the defendant herein failed to use the known and approved appliances and devices as aforesaid, the negligence of the defendant is established.

B. The next question for determination is whether the plaintiff's evidence tended to prove that the failure of the defendant to use and employ the aforementioned known and approved devices and appliances was the proximate cause of the plaintiff's injuries.

The sufficiency of evidence of negligence warranting the submission of a case for determination by a jury has definitely been settled in this jurisdiction by the following decisions:

> *B. & P. Ry. Co.* v. *Golway*, 6 App. D. C. 143. *Gunning* v. *Cooley*, 281 U. S. 90, 50 S. Ct. 231, (affirming 58 App. D. C. 304). *Weisenberg* v. *Hazen*, 63 App. D. C. 398.

In the *Gunning* v. *Cooley*, *case*, *supra*, the Supreme Court of the United States held:

> "It is well settled that where there is uncertainty as to the existence of negligence or contributory negligence, the question is not one of law, *but of fact*, and to be settled by a jury; and this, whether the uncertainty arises from a conflict in the testimony, *or because of the facts being undisputed, fairminded men will honestly draw different conclusions from them.*"

An examination of the evidence adduced by the plaintiff in the instant case tends to prove that the insulation and grounding of the defendant's telephone wires could have been much better (R. 116, 117, 118, 119, 120, 121, 124, 133, 134, 136, 137, 140, 141, 143, 144, 150, 156); that plaintiff was seated at his telephone and was using it during the course of a rain and electrical storm (R. 68); the telephone receiver, which was attached to a telescopic arm, was a distance of from 2 to 4 inches from plaintiff's right ear (R. 20, 22, 57, 58); plaintiff's telephone line was connected through the Naval Observatory switchboard, through the exchange of the defendant telephone company, with the telephone at the home of Mrs. Alderman, a distance from the Naval Observatory of about ten city blocks (R. 21); thunder was heard in the direction of the British Embassy which is a short distance from the Naval Observatory (R. 22, 58, 70); flashes of lightning were seen and at the particular instant (R. 58, 70), while the plaintiff's telephone line was the only one in use at the Naval Observatory (R. 79), the signal lamps on the Naval Observatory switchboard flashed up (R. 78), and Mrs. Alderman heard a big crash of thunder and lightning, and a terrible noise that came not from her house but was right in her telephone (R. 98, 99); the switchboard was caused to act in the aforesaid manner by a foreign current of some sort being introduced into the system at the moment (R. 92, 98, 121 and 122); a blue flame arced from the plaintiff's telephone receiver and struck him on the right side of his head and knocked him back in his chair (R. 58, 68); the right side of his head immediately became inflamed and red (R. 27, 58, 68); plaintiff had trouble with the phone immediately after this occurrence in that it took a long time to get a connection (R. 23, 24); the telephone wires leading to the plaintiff's telephone from the attic were removed by the defendant the next day (R. 27).

Plaintiff's expert testified that he associated the thunder and lightning with the injury to the plaintiff; that telephone people, 99 per cent of the time, have been able to find some system whereby they could protect telephone users from lightning; that the telephone people use that system in their own telephone exchanges; that it is practical to use such system at subscriber's stations or telephones (R. 122). He further testified that an example of how lightning enters telephone wires by induction is where it hits a metal conductor of some sort, such as a metallic roof, and it then builds up a field around that roof as it would in a condenser; the roof acts as one side of a condenser and when a potential of one side of a condenser is built up to a certain point, it will break down and anything in that path would have an induced current (R. 123); if any static current or any current got on that copper roof, (meaning at the Naval Observatory), some of it would go to ground by the downspouts, but not all of it (R. 137); that in *this case* if electricity got on that roof, the natural course for it would be down those downspouts to the ground, but this building (meaning the Naval Observatory) was not thoroughly grounded; it could have had a positive ground on that roof; by a positive ground is meant a piece of lightning rod wire soldered to the roof and one end actually driven into the ground with a ground rod and that would have been a better ground (R. 137); as to whether downspouts would be a better conductor to the ground, that could be qualified by saying it is not recognized by the underwriters as being a ground (R. 137); it would *not always* carry off the current of electricity; it would *not have grounded the building so as to have protected it from current getting inside.* Current could have gotten in there by several means. *It could have gotten in there directly by coming in the roof structure. It would naturally follow the metal roof structure* (R. 137). If the telephone company had used the porcelain tube insulators adjacent to the points of contact (meaning where the telephone wires were close to the exposed steel I-beams), the *possibility would be very remote* that the lightning would have entered the telephone lines (R. 123). Electrical science has progressed to the point where lightning can be controlled (R. 124), *and that the way to control lightning is by properly insulating and properly grounding the telephone system to be protected* (R. 124). Lightning can enter telephone wires by direct contact or by induction (R. 123). *Porcelain tubing should have been used by the defendant on the wires leading to the plaintiff's office* (R. 140). To afford *full protection* to the person using the telephone (meaning the plaintiff), a protector block should have been placed as close as practicable to the telephone set (R. 143).

The telephone system at the Observatory is not properly grounded in that it has no protective device which would allow the lightning or other injurious current to travel to ground without coming back through the exchange again (R. 120).

In order to ascertain whether the evidence in the instant case raised questions of fact tending to show negligence sufficient for a jury's determination, an examination of the following cases involving similar issues which were submitted to a jury, reveals without exception that the evidence in the case at bar pertaining to the same issues was much stronger, and its proximate relation to the injury more clearly shown. The evidence in the case of *Griffith* v. *N. E. Telephone & Telegraph Company (supra)* tended to show that lightning had struck a telephone pole about a quarter of a mile distant from Dr. Sawyer's house. Immediately prior to the lightning striking defendant's telephone wire, Dr. Sawyer was seen sitting in his house under the telephone reading a book. Immediately after the striking of the lightning his hair was discovered on fire, red lines were found extending down his neck, chest and side, traces of electricity were found on the carpet, paper and floor under the chair on which he was sitting. *"These were the only marks to indicate that lightning had entered the house."* No device, as a safeguard or protection against electrical disturbances, was attached to, or connected with the telephone instrument, except on top where there was some device but not in working order and it did not serve the purpose for which it was intended. The court held:

> "In the absence of any other strokes of lightning at that time in the vicinity, and of any marks about the house that indicated that lightning had entered it any other way, *the jury could properly infer from the facts which the evidence tended to show* that the lightning which killed Dr. Sawyer came to and entered the house over the defendant's telephone wire. * * * As we have seen, the evidence tended to show that the lightning struck the defendant's telephone pole about a quarter of a mile away from Dr. Sawyer's house; that it diffused and went to earth by several different routes; and that only a small part of that force went to Dr. Sawyer's house. *If the jury found as this evidence tended to show,* then they were not called upon to find out whether any human agency can control the course of a bolt of lightning in its passage from the clouds to the earth. In that event they were only required to find whether the course of such part of a bolt of the lightning as the evidence tended to show went to Dr. Sawyer's house *can be controlled* when it is upon a telephone wire, and in this connection the question was whether the particular force which the evidence tended to show passed over the defendant's tele-

phone line and killed Dr. Sawyer could, by proper ground connections, *and* by the use of known and approved appliances, have been controlled or diverted so as to have prevented injury therefrom. * * * and the evidence tended to show that the force which killed Dr. Sawyer passed over this wire into the house *without injury to the wire in that vicinity, and without injury to the house. There were no marks to indicate that lightning had entered the house, or that it had been in the immediate vicinity, except the marks on Dr. Sawyer's body and slight marks on the carpet, paper and floor under the chair in which Dr. Sawyer was sitting at the time of his death.* There was evidence tending to show that lightning, when upon a telephone wire, will go to earth on the first ground connection that it comes to; that when such lightning as entered Dr. Sawyer's house, and there killed him, gets upon a telephone line, and passes over the wire without injury to the wire, *it may be conducted to earth by known and approved appliances, without injury to persons or property;* and that, if the defendant's line at Dr. Sawyer's house had been protected by such appliance *and* had been properly grounded, the force which killed him would have gone to earth over such ground connection, instead of jumping from the line and passing to earth through Dr. Sawyer's body. *In this connection, and by this evidence, issues of fact for the consideration of the jury were presented.* It was for them to find what force passed over the defendant's telephone line to Dr. Sawyer's house, and there killed him, and to find the extent of that force. *When the jury had found what the force was and its extent, it was for them to say whether there were known and approved appliances for arresting, diverting and controlling such force so as to prevent injury, and whether the defendant was negligent in not providing such appliances, and whether the deceased came to his death by reason of such neglect.*"

Comparing the facts in the foregoing case to those in the instant case it becomes apparent that much stronger evidence was introduced in the instant case tending to prove that lightning or foreign current was upon the defendant's telephone lines and caused the injury to the plaintiff, and that there was a total failure on the part of the defendant telephone company to use those known and approved appliances and devices at the United States Naval Observatory that were reasonably necessary under the circumstances to prevent lightning or foreign current from coming over its telephone wires and lines so as not to injure the plaintiff. At the risk of repetition the Court's attention is directed to the facts heretofore set forth showing proof of the lightning or foreign current, to the extent of 100,000 volts (without amperage) being present in the telephone wires and equipment at the Naval Observatory; for example, the rain and thunder and electrical storm in progress, the unusual action of the switchboard showing the presence of excessive current on the telephone lines, the noise heard by Mrs. Alderman on the telephone while talking to plaintiff, the blue flame (static electricity) arcing from the telephone receiver and striking the plaintiff and reddening his face and the injury to plaintiff resulting from electrical shock, and the removal of the telephone wires by the defendant company the day following the accident.

Could not the jury from this evidence in the instant case reasonably have found that but for the negligence of the defendant in failing to use one or all of the aforementioned known and approved appliances the injury would not have occurred to the plaintiff?

The law is well settled that causal connection of acts of negligence and resultant injuries can be proven by direct or circumstantial evidence.

In *Lynch* v. *Carolina Telephone & Telegraph Company,* 204 N. C. 252, 167 S. E. 847 (1933), the Court held:

> "All the elements of actionable negligence can be proven by circumstantial as well as direct evidence. In the present case the evidence is to the effect that the injured girl was within two feet of the telephone 'right near—something like a sound hit me on the right side of the head.' The father testified that he saw the bolt on the telephone line about 50 yards on the wire that came into the house; the little piece of wire that came from the ceiling that was attached to the phone was 'swealed.' It was swealed next to the telephone. One sees a smoking gun, hears the explosion and the gun is pointed in the direction of a man or a bird, the man or bird falls. One hears a hen's cackle coming from a brush heap or hen house, and on going to the brush heap or hen house one finds a warm egg. (There is an old saying, "It looks like wisdom, a hen never cackles until she lays an egg.") The evidence though circumstantial would be sufficient to be submitted to a jury to pass on."

In the case of *Southwestern Bell Telephone Co.* v. *McAdoo,* 10 S. W. (2d) 503, (Ark. 1928), the evidence tended to prove the following facts:

> "The appellee had a telephone in his front room and had gotten up to get the baby a drink of water; he was standing under an electric light drop, and was about 15 or 16 feet from the telephone instrument. There was a very severe storm in progress and it hailed and lightened all night. As he was walking to the kitchen to get the water, he heard something pop and the lights went out during the flash and he was knocked out. The lightning seemed to come through the house. He was facing the telephone which was on a wall in the living room and he was standing about the center

> of the kitchen. There was a glass window in the kitchen and it was not broken, and there were no boards or anything taken off the house and no visible sign of it having been struck by lightning. The telephone fuses were burned out. The telephone wire was not grounded properly. The telephone was repaired the next day."

The Court, in its opinion, stated as follows:

> "While this testimony (referring to the protective devices and grounding) is contradicted by the witnesses for the appellant, it is sufficient evidence to submit to the jury the question of whether the instrument was or was not negligently grounded.
>
> "The next contention of the appellant is that the verdict of the jury is not based upon any testimony of how the lightning entered the house, if at all. We do not agree with the appellant in this contention. Appellant argues that there is doubt about the lightning entering the house at all. There is no contradiction about this at all and several witnesses testified that it did enter the house. But how did it enter the house? It would be physically impossible for it to come through the walls or window, unless it came over the electric wire or the telephone. It therefore must have come over one or the other."
>
> "It is undisputed that the telephone was injured and had to be repaired before it could be used although it was in perfect order before the lightning came into the house. We are of the opinion that this was sufficient evidence to submit to the jury the question of whether it came in over the electric wires or the telephone wires; that is, it is sufficient to submit to them the question whether it entered the house because of the negligence of the defendant. * * * "
>
> "It has been said '*It is error to grant a nonsuit because the facts testified to are incredible*

> *and impossible*, when it is not shown by science and common knowledge that the testimony—the case involving electrical phenomena—is false, and according to some authorities a verdict cannot be directed for the defendant in such an action, although its evidence is uncontradicted and sufficient, if true, to overcome the prima facie case made by the plaintiff. * * * The question whether or not the negligence of the defendant was the proximate cause of the injury where the evidence is not clear, or the proper inference from undisputed evidence may be in doubt is for the jury" 9 R. C. L. 1227-1228.

In the case of *Texas Telephone and Telegraph Company* v. *Scott*, 60 Tex. Civ. App. 39, 127 S. W. 587 (1910), the Court held:

> "While there is evidence tending to show that twisting the line wire and the ground wire together is one of the safeguards to prevent lightning from entering the house, yet there is evidence to the effect that the use of a lightning arrester is a *better one*."
>
> "We believe the duty devolving upon it (the defendant telephone company) was not only to use as good precaution as was known to it or its agents, but the further duty was imposed of at least exercising such reasonable precaution as a man of ordinary care and prudence would do to select and use the *best methods* known to science for the prevention of such injuries; and, since it was operating a dangerous agency, it could not escape liability, we think, alone on the plea that the instrumentalities used for the protection of its patrons were as good as known to it, because, *if there were better methods known to science by which it could protect them from such danger, it should be held at least to the exercise of ordinary care to select and use them.*"

In the case at bar the testimony tended to prove that the porcelain tube insulator was designed for the purpose of protecting the normally insulated telephone wires against excessive current, the effect of the porcelain tube insulator being about the ratio of about 1000 to 1 more durable and resistant (R. 118) to withstand the discharges of excessive currents of electricity; that the helix or choke coil was designed to be used as part of a telephone wire, its purpose being to choke down excessive or foreign currents coming through the telephone line and it accomplishes that by its circular formation which causes the excessive current to wind itself around and through the coil, the effect of which dissipates the execessive current and renders it harmless (R. 19); the protector block, which should be used near the telephone set on the desk, consists of carbon blocks so designed that when excessive current comes through the telephone wire and enters the protector block, the current is caused to jump a gap between two fuses or carbon blocks which dissipates and diffuses the effect of the current thereby rendering it harmless (R. 117-118); the purpose of grounding the telephone system by means of a wire attached to a metal rod driven into the ground is to divert the excessive charge through that wire into the ground rendering harmless the excessive current. The foregoing known and approved devices and appliances were not used by the defendant telephone company in the instant case, which in itself is evidence of negligence on the part of the defendant. The evidence further tended to prove that such failure to use one or all of the forestated appliances caused the lightning to come through the telephone wires and injure the plaintiff. The testimony of the plaintiff's expert witness tended to prove that the telephone wiring would not necessarily be damaged or injured as the result of an excessive current passing over them. There was evidence to the effect that immediately after the occurrence of the lightning striking the plaintiff, it was hard to get a connection through the plaintiff's telephone with the switchboard in the Naval Observatory or the telephone exchange. It is submitted that such evidence presented questions of negligence and proximate cause for the jury's determination.

In the case of *Southern Telegraph and Telephone Company* v. *Evans*, 54 Tex. Civ. App. 63, 116 S. W. 418 (1909), the issue that the current of electricity from which the plaintiff received the shock came into the residence over the appellant's wires together with the contention that the failure, if any, to install a ground wire at that place was not the proximate cause of the injuries, furnished the principal contest in the trial below. The evidence in the case was as follows:

> "During a rain and thunder storm Mrs. Evans, the wife of the appellee, was standing in a room which contained a telephone and within 4 or 5 feet where the instrument was attached with the wall. The room was provided with doors and windows and a brick chimney with an open fire-place. There suddenly appeared a bright flash of lightning that illuminated the room like a ball of fire, which was immediately followed by a loud report like the discharge of a gun. Mrs. Evans was found lying unconscious on the floor within about 4 or 5 feet of the telephone. She was burned on the left side of her face and neck and her left arm. The telephone failed to work immediately afterwards."

The Court, in deciding whether there was sufficient evidence tending to prove that the lightning came through the telephone set, held as follows:

> "The jury and the court were thus left much to their own knowledge, gained from common observation, to determine the issue presented. * * * The current entered the room through some channel or conductor. There was no evidence of its having come in contact with any portion of the building or of the chimney, but there was evidence that it had passed over some portion of the wire of the appellant just outside of the room. According to some of the witnesses, a portion of the current *might* and would have returned to the nearest ground connection after striking the wires, and the rest would be disseminated at the point where it entered the room. Others say that it *might* have leaped from the wire or phone to the body of Mrs. Evans. Those assignments which raise the issue of the sufficiency of the evidence to sustain the verdict are therefore overruled." (These assignments of error were made by the appellant, the defendant telephone company).

In the case of *Southwestern Telegraph & Telephone Co.* v. *Abeles,* 94 Ark. 254, 126 S. W. 724 (1910), the facts were as follows:

> "The appellee was injured while answering a telephone call. He had put the receiver to his ear and was using the telephone in the usual way at the time he received the injuries. There had been April showers throughout the day on which he was injured and the usual flashes of lightning. The expert evidence adduced in his behalf tended to show that a protective device or lightning arrester without a ground wire attachment would be of almost no protection against lightning. The appellant, by competent evidence, adduced evi-

> dence, tending to prove that its telephones were constructed with the kind of lightning protectors *generally* in use in this State and that protectors with ground wire attachments *were nowhere in use in the State.*''

The Court, in its opinion, held as follows:

> ''This testimony on the part of appellant only tended to show that appellant had discharged its duty by using lightning arresters of the most practical kind and in general use; *and it was still a question of fact for the jury to say if this was true.*
>
> ''We are of the opinion that the facts and circumstances adduced in evidence, when considered in the light most favorable to appellee, warranted the jury in finding that the injury was received during an ordinary electrical disturbance, while appellee was using the telephone in the ordinary way, and that the failure on the part of appellant to attach a ground wire to its lightning arrester to the telephone in question was negligence and that it was the proximate cause of the injury.''

In the case of *Evans* v. *Eastern Kentucky Telephone & Telegraph Co.,* 124 Ky. 620, 99 S. W. 936, (1907), the Court, in its opinion, stated the facts as follows:

> ''The appellant ordered the appellee to remove the telephone box and wires from his house. It took out the telephone box, but failed to remove the wires, simply cutting them loose from the telephone box and leaving them in the house. There was a severe thunderstorm and lighting struck a locust tree not far from the Evans' house to which the wire of the telephone company was attached. The lightning tore up the tree and passed along the wire into the house tearing up the room in which the wires had been left and damaging the

> property. On the trial the plaintiff proved, in substance, the facts just stated."
>
> "The Court peremptorily instructed the jury to find for the defendant."

In reversing this decision, the Court held as follows:

> "While lightning is the act of God, the carrying of the lightning in the plaintiff's house on its wire which it had left in the house was the act of the defendant, and it was a question for the jury whether the defendant had used such care as might be reasonably expected of a person of ordinary prudence under the circumstances." * * *
>
> "In placing wires for conducting electricity into a house, a telephone company owes the persons living there the exercise of reasonable care, proportioned to the known dangers of the conditions, to prevent the wires acting as conductors of lightning into the building and it is liable for damage resulting from neglect to provide against this danger."

In the case of *Wells* v. *Northeastern Telephone Co.*, 64 Atl., 649, (Maine) the facts were as follows:

> "The plaintiff owned a barn, and the defendant's telephone lines were supported upon poles in the ordinary manner, one of the poles being erected within about five feet of the northeast corner of the plaintiff's barn. A guy wire, consisting of a piece of ordinary telephone wire, was stretched from the pole to the corner of the barn. There were several other telephone poles in the line extending northerly from the barn, for a distance of about 1800 feet. About 650 feet north of the barn an elm tree was struck by lightning during a rainstorm. Four of the telephone poles were shattered or slivered, while the several other poles didn't happen to be injured by the lightning. The poles that were injured were numbers 1, 3, 4 and

> 10. Nor was there any direct evidence of such injury to the pole at the corner of the barn or to any pole south of the barn."
>
> "Upon this state of facts it was the theory of the plaintiff that a fragment of the lightning bolt which shattered the elm tree, struck the telephone wires in close proximity to the overhanging branches; that an electric current was conducted by these wires to the most northerly pole that was found to be slivered, and in the opposite direction, past the most southerly pole that was splintered, to the pole at the corner of the barn; and that a current then passed into the guy wire; and thence by the wire to the corner of the barn which was thus ignited."

The Court, in its opinion, held as follows:

> "In view of the admitted limitations of human knowledge respecting the laws of electricity and the immeasureable potential of a lightning discharge, the opinions of electricians in regard to its possibilities in a given case cannot be adopted with the same confidence as expert opinions based upon knowledge of the more exact sciences; and in view of the manifest effects of the lightning upon the telephone poles and the corner board of the barn in this case, it is the opinion of the court that the evidence warranted the jury in following the conclusions of those experts who believed that the destructive spark was conveyed to the corner of the barn by the telephone wires, in preference to those who testify that the barn was struck by a branch of a lightning bolt discharged directly from the clouds."
>
> "It was incumbent upon the plaintiff then to show in the second place, that in connecting and maintaining a guy wire between the telephone pole and the plaintiff's barn without lightning arresters or circuit breakers, the defendant company did not use that degree of care, prudence, and fore-

> sight demanded by the exigencies of the situation. The company was not obliged by law to guaranty the safety of its system under all possible conditions and circumstances, but it was required to exercise that due and ordinary care *which the present state of scientific knowledge, as well as common observation of the nature of electricity and the enormous power of lightning would suggest as reasonably necessary for the protection of life and property along its line.*"
>
> "And it was the obvious duty of the defendant company to adopt methods of construction with reasonable regard to the protection of life and property against the ravages of lightning, and to anticipate, as far as practicable by the exercise of due care and prudence, not only the probable effects of ordinary lightning discharges, but of such extraordinary thunderstorms as according to the common observation of men, are known to occur not necessarily once every year, but once in several years, and at no regular intervals."
>
> "*Thus if the plaintiff's theory is correct that it was not safe or suitable construction to connect the guy wire with the barn without a lightning arrester or circuit breaker, the evidence warranted a finding by the jury that the defendant company did not exercise reasonable and ordinary care in establishing its line at the point in question.*"

In the case of *Southern Bell Telephone & Telegraph Co.* v. *McTyer*, 137 Ala. 601, 34 So. 1020 (1903), the Court, in its opinion, stated the facts as follows:

> "The plaintiff was seated in a shoe store about four or five feet from where the defendant's telephone wires were hanging from the wall. The telephone wires had been cut and were twisted together. A lightning storm came up and during the storm a bolt of lightning ran down the wires and struck the plaintiff causing her to be injured;

> several witnesses described the striking of the plaintiff by the lightning. The defendant tended to show that it had employed the best methods in the construction of its telephone connections.''

The Court, in its opinion, held as follows:

> ``It may be said to be familiar facts in physics, and therefore within the common knowledge of mankind and within the judicial knowledge of courts that atmospheric electricity, or lightning, is frequently discharged from clouds, and passes to the earth; that metal wires strung in the air are good conductors of electricity * * *; that animal bodies, the bodies of human beings among the rest, are also better conductors than the air or than wood; that electricity so discharged in the vicinity of such wires is liable and apt to pass into them and along them to their ends, and thence through the best conductor at hand into the earth; that if a human body is in contact with the end of the wire, the current will pass through it to the ground, and that, though not in actual contact with the end of the wire whence the current must go to the ground, but near to it, the current, instead of passing through the air to the ground, will seek the better conductor of the body, pass through the air to it, and through it to the earth. * * * It may also be said to be common knowledge that where two wires are strung near to each other, within a foot or two, on poles, through the air, after the manner of telephone and telegraph wires, there is a likelihood or liability that lightning, in its descent from the clouds, will strike and follow both of them to their ends, unless diverted by other more attractive conductors, and must necessarily then pass from them to the earth through the best conductor then in its general pathway.''
>
> ``If, by the exercise of such reasonable precautions as a man of ordinary care and prudence would exercise in respect of such a dangerous

> agent, injuries to persons and property from the conduction along the wires and into houses of currents of atmospheric electricity may be avoided, it is the duty of companies engaged in this business to employ devices and appliances to that end. If the danger cannot be wholly avoided, due care should be taken to minimize it."
>
> "The duty to the plaintiff being alleged and proved, as also defendant's failure to perform that duty, and the proof being without conflict, *the only question for the jury, assuming that they believed the evidence as to the wires being left in the store under the circumstances detailed before them, was whether these wires inducted atmospheric electricity into the store and discharged the current upon the person of the plaintiff, and whether she was injured thereby. To say the least, the evidence was overwhelming, though not perhaps to the exclusion of all ground for a contrary inference, to the establishment of the injury and of the causal connection between the wrong and it.*"

Upon careful consideration of the facts in the foregoing cases and their comparison with the facts in the instant case, it seems apparent that plaintiff in the instant case presented stronger evidence, tending to prove that the failure of the defendant to use the designated known and approved devices and appliances to prevent foreign and atmospheric currents of electricity from coming upon and over the defendant's telephone lines at the Naval Observatory caused the injury to the plaintiff. It is not necessary for the plaintiff to place his hand upon the precise thing which caused the accident. It is sufficient if the evidence tends to prove that the accident must have been caused by one or more of the several acts of negligence of the defendant established by plaintiff, anyone or all of which could reasonably have caused the accident, and for which the defendant would be responsible. *Cain* v. *Southern Mass. Telephone Company,* 219 Mass. 504, 107 N. E. 380.

This Court has said that "In determining whether defendant's negligence was the proximate cause of plaintiff's injury, the question is whether, in the sequence of events between defendant's default and plaintiff's injury, an entirely independent and unrelated cause intervened, or whether the injury was the immediate, natural, and probable consequence of such default." *Le Foe* v. *Corby Company,* 38 App. D. C. 54.

" 'Proximate Cause' of injury is that cause which, in natural and continuous sequence, unbroken by any efficient intervening cause, produces injury, and without which result would not have occurred." *S. S. Kresge Co.* v. *Kenney,* 66 App. D. C. 272, 86 F. (2d) 651.

Therefore, it *has* been established by competent evidence that but for the failure of the defendant telephone company to use known and approved devices and appliances reasonably necessary to prevent foreign current or atmospheric electricity from passing over its telephone wires, the accident never would have happened. In line with the decisions of the cases heretofore cited in support of this contention, and by the further showing that no efficient cause intervened, and that the injury to the plaintiff was caused by the continuous and natural sequence of the defendant's failure to use those known and approved devices and appliances, sufficient evidence of a competent character has been established by the plaintiff creating a question of fact for the jury's determination.

II

Upon the ruling of the court below that there was a failure of proof of specific acts of negligence, could the plaintiff then rely upon the doctrine of *Res Ipsa Loquitur,* as pleaded in his declaration, and have the case submitted to the jury on this doctrine?

Assignment of errors Nos. 1, 6, 7b, and 10 are included in the discussion of this point.

In 26 R. C. L. 531, 532, following a statement of the general principle of law applicable to this question, setting forth the duty of telephone companies to prevent charges of atmospheric electricity from entering buildings over its wires, it is said:

> "And if a person is injured by a current from a telephone on his premises, *such fact of itself is evidence of negligence* on the part of the company."

The court below, in directing a verdict against plaintiff at the close of his case, ruled that having undertaken but failing to prove specific acts of negligence, after pleading general negligence, the plaintiff was precluded from relying upon the doctrine of *res ipsa loquitur* and having the case submitted to the jury under that doctrine. Assuming, without conceding, that plaintiff did fail to prove a specific act of negligence on the part of the defendant, it is nevertheless submitted that the law is clear and well settled that having pleaded general negligence, and having attempted but failed to prove specific acts of negligence, plaintiff can fall back and rely upon his original theory of general negligence and have his case submitted to the jury under the doctrine of *res ipsa loquitur.*

There seems to be a unanimous feeling among the courts that have considered this question that the mere introduction, under general allegations of negligence, of evidence of specific acts of negligence which are not proved to be the *precise* cause of the injury, and thus to preclude any inference of negligence, does not prevent resort by the plaintiff to the presumption of negligence arising out of the doctrine of *res ipsa loquitur.* 93 A. L. R. 610.

In the case of *Pennsylvania Co.* v. *Clark*, 266 F. 182, 187 (6 C. C. A. 1920), the court held as follows:

> "* * * We think the better rule, sustained by the greater weight of authority, supports the application of the rule of presumption under the pleadings here. *That even an unsuccessful attempt by a plaintiff to prove by direct evidence the precise cause of the accident does not estop him from relying upon the inference of negligence from the accident itself.*"

A decision frequently cited as authority for the rule that a plaintiff does not lose the right to rely on the doctrine of *res ipsa loquitur* by attempting to show particularly the cause of the accident, if at the close of the testimony the cause does not clearly appear, or if there is a dispute as to what such cause was, is found in *Cassady* v. *Old Colony St. Ry. Co.,* 184 Mass. 156, 68 N. E. 10, 63 A. L. R. 285, in which the court, in holding that a contention that a plaintiff loses or waives his rights under the *res ipsa loquitur* doctrine where, instead of resting his case solely upon it, he undertakes to go further and show particularly the cause of the accident, *is not tenable,* says:

> "* * * But if, at the close of the evidence, the cause does not clearly appear, or if there is a dis-

> pute as to what it is, then it is open to plaintiff to argue upon the whole evidence, and the jury are justified in relying upon presumptions, unless they are satisfied that the cause has been shown to be inconsistent with it. *An unsuccessful attempt to prove by direct evidence the precise cause does not estop the plaintiff from relying upon the presumptions applicable to it.*"

In the case of *Cain* v. *Southern Mass. Telephone Co.*, 219 Mass. 504, 107 N. E. 380, the court held:

> "In case the jury were not satisfied that the plaintiff was right in her contention as to the specific negligence she undertook to prove, she had a right to fall back upon the doctrine of res ipsa loquitur."

Again, in the case of *McNamara* v. *Boston & M. R. Co.*, 202 Mass. 491, 89 N. E. 131, the court said that the mere fact that either party or both parties had attempted to explain an accident, *and had failed in that attempt*, would not prevent the application of the doctrine of *res ipsa loquitur.*

The court, speaking in the case of *Cleary* v. *Cavanaugh*, 219 Mass. 281, 106 N. E. 998, said that a plaintiff has the right to rely on the doctrine of *res ipsa loquitur* if the jury thinks he has been unsuccessful in his attempt to make out a case of specific negligence.

The court, in the case of *Porter* v. *St. Joseph R. Light, Heat & P. Co.*, 311 Mo. 66, 277 S. W. 913, 26 N. C. C. A. 284, said that while the plaintiff, in the introduction of evidence of specific negligence, assumed an unnecessary burden to enable her to make out a prima facie case, she did not thereby lose the right of resting upon the presumption of the defendant's negligence if the evidence so introduced did not clearly show what caused the accident.

In the case of *Glasco Electric Co.* v. *Union Electric Light & P. Co.*, 332 Mo. 1079, 61 S. W. (2d) 955, in which, in response to the claim that the plaintiff had "proved its case too well" and was thereby precluded from reliance on the doctrine of presumptive negligence in the escape of electricity, the court said that the proof could not be said to clearly point out or establish any precise or specific act or omission or want of care on the part of the defendant, on account of which electricity escaped, and that plaintiff was not precluded thereby from invoking or relying on the presumption or inference of negligence under the doctrine of *res ipsa loquitur.*

In the case of *D'Arcy* v. *Westchester Electric R. Co.*, 82 App. Div. 263, 81 N. Y. S. 952, the court said that although a plaintiff undertakes to prove a specific cause for the escape of electricity, and fails therein, the defendant is not necessarily relieved of the legal obligation to give an explanation of the extraordinary occurrence.

In California, in the case of *Seney* v. *Pickwick Stages,* 82 Cal. App. 226, 255 P. 279, which involved an action for the wrongful death of a passenger in the overturning of a stage, raising the presumption of *res ipsa loquitur,* the court said:

> "The pleading does not state how or in what manner the stage was overturned. There is no dispute in the evidence as to the fact of the overturning; but there is a conflict as to what happened at the time of the accident. The mere fact that plaintiff went further than required in proving her prima facie case, in offering some testimony as to the manner in which the overturning occurred, does

> not deprive her of the benefit of the doctrine of res ipsa loquitur. * * * In the present case the evidence offered by the plaintiff does not disclose the cause of the overturning as a definite fact. * * * The precise cause of the overturning of the stage remains unknown, and the plaintiff is entitled to the inferences arising from the doctrine of res ipsa loquitur."

In the recent case of *Partin* v. *Black Mountain Corp.*, 248 Ky. 32, 58 S. W. (2d) 234, 93 A. L. R. 606, the court, while acknowledging the general rule that the principle of *res ipsa loquitur* does not apply, or that at least the presumption raised by its application is overcome, where the plaintiff has full knowledge of and testifies as to the specific act of negligence which was the cause of the injury complained of, or where there is direct evidence as to the precise cause of the accident, and all the facts and circumstances attendant upon the occurrence clearly appear, *said that the fact that plaintiff, after showing that his intestate was an invitee in the mine of the defendant at the time of his death, and that he had been killed by a cut of runaway mine cars, introduced additional evidence on the trial tending to show that a coupling link on the mine car nearest the entry of the mine whence the runaway cars had come was worn and broken, did not preclude him from relying on the doctrine of res ipsa loquitur where the cause of the accident was not thereby clearly established, the court saying that the worn link was not worn to such an extent as to indicate clearly that the wear on it was the cause of its break.*

This court's attention is directed to the additional cases, supporting the foregoing statements of law, collected in the note in 93 A. L. R. beginning at page 609. An examination of the cases contained in said note discloses that the proposition of law that a plaintiff is not estopped from relying upon the doctrine of *res ipsa loquitur,* upon pleading general negligence, after attempting but failing to prove specific acts of negligence, has been favorably approved and adopted by all courts which have *considered* it.

Inasmuch as the burden of proof is always upon the plaintiff, it is incumbent upon him to present as strong a case as possible in his case in chief. The plaintiff cannot merely rest on the presumption and attempt to overcome the defendant's claim of freedom from negligence on rebuttal.

In *Lyman* v. *Knickerbocker Theatre Corp.,* 55 App. D. C. 323, the plaintiff rested his case after proving the death of his intestate due to the collapsing of the roof of the theatre he was attending. The defendant's evidence tended to prove its freedom from negligence in that the plans and specifications were duly approved by the proper officials of the District of Columbia, that materials and labor were furnished by an experienced general contractor, and that a proper inspection was made of the building upon its completion and that no defects were discovered, and that the building was approved by the building inspectors of the District of Columbia. The plaintiff, in rebuttal, tendered proof of certain testimony tending to prove the existence of alleged inherent faults in the architect's plans, as well as defects both of materials and workmanship in the construction of the theatre. This tender of proof by the plaintiff was excluded by the lower court upon objection, upon the ground that it was evidence in chief and was not admissible in rebuttal. This court, in affirming the decision of the lower court, held:

> "We think that this ruling was correct. The application of the rule of res ipsa loquitur *did not excuse* the plaintiff from the duty of introducing in chief all of her evidence in support of the charge of negligence."

The plaintiff in the instant case, complying with the foregoing authority, produced all his evidence in his case in chief tending to establish the negligence of the defendant and as a result thereof was penalized by the court below by being precluded from having his case submitted to the jury under the doctrine of *res ipsa loquitur.*

In opposition to the plaintiff's contention that on pleading general negligence, and attempting but failing to prove specific acts of negligence, the plaintiff was not estopped to rely upon and have his case submitted to the jury on the doctrine of *res ipsa loquitur,* the defendant below relied upon the case of *Pistorio* v. *Capital Traction Co.*, 46 App. D. C. 479. A careful study of that case fails to disclose a situation even remotely analogous to the instant case. In the *Pistorio* case, *supra*, the plaintiff, pleading general negligence, nevertheless actually proved specific causal negligence sufficient to allow the case to go to the jury which found against her. The refusal of the trial court to charge the jury, as requested by plaintiff, on the doctrine of negligence was assigned as error. On appeal, this court in affirming the decision of the lower court, held as follows:

> "All the circumstances tending to establish negligence on the part of the defendants were adduced by the testimony of plaintiff and her witnesses in her case in chief. Nothing was left for defendants but rebuttal. To such a case res ipsa loquitur has no application."

Certainly such a situation as existed in the Pistorio case is no authority for the defendant's contention that a plaintiff who attempts but fails to prove specific acts of negligence is estopped to rely upon the doctrine of *res ipsa loquitur* where he has pleaded general negligence. Defendant's interpretation of the Pistorio case would act to deprive the plaintiff of rights already established under the *res ipsa loquitur* doctrine. It seems only reasonable that when a plaintiff has once made out a case sufficient to be submitted to a jury, any further attempt on his part to offer evidence of negligence which may enlighten the jury should not jeopardize his case and prevent its submission to the jury.

In the instant case, the court below held, as a matter of law, that the plaintiff failed to establish any negligence on the part of the defendant (R. 184). Courts have uniformly held that if a person is injured by an electric current from a telephone on his premises, *such fact of itself* is evidence of negligence.

> *Lynch* v. *Carolina Telephone & Telegraph Co.*, *supra.*
> *Delahunt* v. *United Telephone & Telegraph Co.*, *supra.*
> *Joyce* v. *Missouri & Kansas Telephone Co.*, *supra.*
> *Warren* v. *Missouri & Kansas Telephone Co.*, *supra.*

That plaintiff was injured by an excessive electric current coming from defendant's telephone receiver is uncontradicted in the instant case. Under the foregoing authorities *this fact, in and of itself*, is evidence of negligence. The facts, in the instant case, also remain uncontradicted that a blue flame (static electricity) arced from the defendant's telephone receiver and struck the plaintiff on the right side of his head. The medical evidence disclosed that the injuries received by the plaintiff were caused by the blue flame aforesaid (R. 163, 165, 178, 179, and 181).

It is, therefore, respectfully submitted, in view of the foregoing authorities, the manner by which plaintiff was injured and the nature of the injuries received by him, that the lower court erred in taking the case from the jury and ruling as a matter of law that there was a total failure of proof of negligence on the part of the defendant.

III.

Was the injury to plaintiff caused solely by an act of God, or by an act of God concurring with an act of negligence of the defendant?

Assignments of error Nos. 1, 2 and 3 are included in the discussion of this point.

In directing a verdict against the plaintiff the court below ruled as a matter of law that lightning, an act of God, was the sole cause of the injury to the plaintiff (R. 184).

The plaintiff concedes that lightning is an act of God, but contends the law is well settled that where an act of God concurs with an act of negligence on the part of a defendant, that the defendant thereby becomes liable for an injury caused by such concurrent act. This principle of law is too well established to require a lengthy citation of authority, but the following cases, being particularly pertinent to the law and facts in the instant case, are submitted for consideration.

Pearce v. *Mt. States Telephone & Telegraph Co.*, 65 Col. 91, 173 P. 871, L. R. A. 1918 F. 1102.

Lynch v. *Carolina Telephone & Telegraph Co., supra.* N.C
Cohen & Stryck v. *Home Telephone Co., supra.* Ky
Evans v. *Eastern Ky. Telephone & Telegraph Co., supra.* Ky
Jackson v. *Wisconsin Telephone Co., supra.* Wis
Warren v. *Missouri & Kansas Telephone Co., supra.* Mo.

In the case of *Pearce* v. *Mt. States Telephone & Telegraph Co., supra,* the court held:

> "* * * Because such excess current was produced by lightning makes no difference in defendant's liability, if it could have avoided the injury by exercising ordinary care and diligence. From the business in which the defendant was engaged, it is presumed to have special knowledge and skill in such matters, not possessed by laymen, which it was its duty to use for the protection of its patrons, no matter whether the current was generated by it or produced by lightning. It was as much its duty to be diligent in affording protection against a current likely to come over the wires not generated by it as a current it generated, *and it could not escape this responsibility by pleading that the excess current was induced by lightning.* No one was responsible for the lightning; but if defendant's faulty installation or management of the phone and its appliances was responsible for the excess current coming over the wires * * *, or if by the use of ordinary and reasonable care, precaution and diligence it could have avoided the injury, it is responsible."

In the case of *Cohen & Stryck* v. *Home Telephone Co., supra,* the court held:

> "The fact that lightning is an act of God is not allowed to excuse the company when its negligence

> co-operating with the lightning produced the injury and loss complained of, for it is everywhere recognized that where the negligence of a responsible person concurs with an act of God in producing an injury, the one guilty of the negligent act will be liable for the consequences, as the injury would not have happened but for his negligence. * * *
>
> The rule is rested upon the idea that it is the duty of one guilty of negligence to anticipate such an act of God and to exercise reasonable care to guard against and prevent such act from producing serious consequences. * * * ''

In the case of *Jackson* v. *Wisconsin Telephone Co.*, *supra*, the court held:

> ''The further argument is made that the stroke of lightning was an 'act of God,' for which no one is responsible. Certainly a stroke of lightning is an act of God, but that is not the question here presented, but rather another element—i.e., the negligence of man—is added to the question, which materially alters its scope. If I, owning a high mast or building, which I know is so situated as to be very likely struck by lightning, construct an active path for the lightning to my neighbor's roof, so that his house is destroyed by a bolt which strikes my mast or building, shall I escape liability for my negligent or wrongful act by pleading that the lightning was an act of God? Certainly not. I invited the stroke of one of the most destructive powers of nature, and negligently turned its course to my neighbor's property. * * * The lightning stroke is no greater degree the act of God than the usual freshets occurring in a river. Our conclusion is that the court properly refused to grant a nonsuit, and also properly refused to direct a verdict for the defendant.''

An examination of the plaintiff's evidence, heretofore set forth in points I and II of this brief, and as appears in the record of this case, discloses that specific or general negligence was established on the part of the defendant, particularly in that the defendant placed and maintained its wires and equipment in the Naval Observatory without those safeguarding devices which were reasonably necessary to prevent lightning, an act of God, from injuring the plaintiff.

As was held in the case of *Warren* v. *Mo. & Kans. Telephone Company, supra*, the court in approving the quotation from Curtis' law of Electricity, section 455, and Jones on Telegraphs and Telephones, Section 196a, stated as follows:

> "A company whose wires enter a building 'is bound to anticipate that unless devices are installed to prevent it lightning may follow its wires into the building resulting in personal injury.' If lightning is conducted to or into a building through the negligence of the owner of the wires entering such building the owner may be liable, though the lightning may be considered an act of God, the carrying of it into the building may be the act of the owner."

Therefore, in the instance case, having established that the blue flame which arced from the defendant's telephone and struck the plaintiff was caused by either the specific or general negligence of the defendant, it is obvious that lightning, an act of God, concurred with the negligence of the defendant to produce the injury complained of and, therefore, the court below erred in ruling as a matter of law that an act of God was the sole cause of the accident and injury to plaintiff.

CONCLUSION.

It is respectfully submitted that the court below erred in directing a verdict for the defendant at the close of the plaintiff's case and, therefore, the judgment entered below against the plaintiff should be reversed with costs, and the cause remanded for a new trial.

Respectfully submitted,

Harry H. Bettelman,
H. Max Ammerman,
Attorneys for Appellant.

UNITED STATES
COURT OF APPEALS FOR THE
DISTRICT OF COLUMBIA
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IN THE

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA.

October Term 1938.

No. 7266.

JULIUS F. HELLWEG, APPELLANT,

vs.

CHESAPEAKE & POTOMAC TELEPHONE COMPANY, A CORPORATION, APPELLEE.

BRIEF FOR APPELLEE.

Geo. P. Hoover,
R. A. Van Orsdel,
Attorneys for Appellee.

Press of Byron S. Adams, Washington, D. C.

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BRIEF FOR APPELLEE.

PRELIMINARY STATEMENT.

This is an appeal by appellant (plaintiff below) from a judgment of the District Court of the United States for the District of Columbia for appellee (defendant below) upon the verdict of a jury for the defendant, by direction of the Court, at the close of the case of appellant (plaintiff below). (R. 182-184)

The action at law, in which the judgment was entered, was instituted by appellant against appellee, seeking to recover damages for injuries claimed to have been suffered by appellant by reason of alleged negligence of appellee.

(For convenience, appellant will be referred to sometimes hereinafter as "plaintiff", and appellee as "defendant", in accordance with the alignment of the parties in the Court below. In each instance, emphasis is ours unless otherwise stated.)

STATEMENT OF THE CASE.

Negligence alleged in declaration.

> *First count:* "* * * and that on the aforesaid date, to wit, the 6th. of June, 1934, the aforesaid telephone system and apparati were in use at the United States Naval Observatory aforesaid; **that it then and there became and was the duty of the defendant to exercise the highest degree of care** to keep its telephones, wires and apparati in a safe condition so as not to injure patrons, and more particularly this plaintiff; yet, the defendant, notwithstanding its duty as aforesaid and negligently disregarding the same, and while the plaintiff was in the discharge of his duties as a naval officer in the United States Naval Observatory aforesaid, and while in the exercise of due care, attempted to use one of the telephones, installed by the defendant, and in so doing and while the receiver of the said telephone was about 3 or 4 inches distant from the right ear of the plaintiff, the said plaintiff was suddenly and violently struck by lightning and electricity which came through the receiver of the said telephone by reason of the negligence of the defendant, * * *".

> *Second count:* "* * * **That it then and there became and was the duty of the defendant to exercise ordinary care and diligence** to keep its telephones, wires and apparati in a safe condition so as not to injure patrons, and more particularly this plaintiff; yet, the defendant, notwithstanding its duty as aforesaid and negligently disregarding the same, and while the plaintiff was in the discharge of his duties as a naval officer in the United States Naval Observatory aforesaid, and while in the exercise of due care, attempted to use one of the telephones installed by the defendant, and in so doing and while the receiver of the said telephone was about 3 or 4 inches distant from the right ear of the plaintiff, the said plaintiff was suddenly and violently struck by lightning and electricity which came through the receiver of the said telephone by reason of the negligence of the defendant, * * *".

It will thus be seen that in each count of the declaration the negligence of the defendant is alleged generally, the allegation of negligence in each count being identical, except that in the first count it is alleged that the duty imposed upon the defendant was **"to exercise the highest degree of care"**, whereas, in the second count of the declaration it is alleged that there was imposed upon the defendant the duty **"to exercise ordinary care and diligence".**

Brief summary of the facts.

From the evidence it appears that plaintiff, a Captain of the United States Navy on the retired list, was superintendent of the United States Naval Observatory on June 6, 1934. (R. 18)

In the Naval Observatory defendant had installed a private branch exchange switchboard, which served twenty-three telephones. (R. 80) This switchboard was located on the first floor, and was operated by one Cook, who was employed as a guard at the Naval Observatory. (R. 77)

Soon after the plaintiff went to the Naval Observatory in 1930 he had constructed and installed a telescopic arrangement so as to facilitate his use of the telephone. This telescopic arm was made of sheet brass painted black, with a spring which was made of brass. (R. 19-20)

About 4 o'clock in the afternoon of June 6, 1934, plaintiff was in his office on the second floor of the Observatory building in conference with Dr. James Robertson, Director of the Nautical Almanac Office of the Naval Observatory (R. 56) and Judd E. Dickey, Administrative Assistant and Chief Clerk. (R. 67)

While they were conferring, plaintiff used the telephone to call the home of Mrs. Marguerite Alderman, who lived at 1814 24th Street (R. 98) in the block north of Massachusetts Avenue and south of California Street. (R. 21) When plaintiff was using the telephone, the receiver of the telephone was held about 3 to 4 inches from his right ear (R. 57) but did not touch his ear. (R. 21) When plaintiff was using the telephone he released the spring on the telescopic arm and was connected with the switchboard in the Observatory. (R. 35) The switchboard operator connected Captain Hellweg's telephone with the central office, the operator was given the number (R. 78) and Captain Hellweg spoke to Mrs. Alderman. (R. 72) While telephoning Mrs. Alderman, plaintiff felt a pain in his right ear as if someone had stuck a needle or a long pin or something in it. He could feel it inside and was thrown back in his chair. (R. 22)

Immediately after this pain there was a terrific crash of lightning, or rather the noise of thunder that came through the southwest window in the direction of the British Embassy, and the noise sounded as if it was down at the British Embassy, "but of course we cannot locate—just in that direction". (R. 22)

Dr. James Robertson testified that he was sitting at the right side of the desk of Captain Hellweg, and was looking at the Captain; that while the telephone receiver was about 3 or 4 inches from Captain Hellweg's head (R. 57) a blue streak came from the earpiece of the telephone, jumped the space of 3 or 4 inches, and seemed to spread over the head of plaintiff. It was a blue flame that went from the receiver into his ear, and plaintiff jumped back and put both hands up to his head. (R. 58)

There was some lightning just before that, a few minutes, and it seemed that just right afterwards there was a great clap of thunder, that is, just after plaintiff jumped back with his head this way. An appreciable time after that there was a great clap of thunder and a flash of lightning in the direction of the Embassy. When witness (Robertson) says it was an appreciable time, he means it was not at the same time, but it was afterwards, a matter of seconds, from 5 to 20 seconds. (R. 58)

Judd E. Dickey testified that he was seated at Captain Hellweg's desk, directly opposite the Captain, and facing him. Dr. Robertson was to the left of witness. Captain Hellweg used the telephone. The receiver of the telephone was not in contact with his ear. His ear was 3 or 4 inches from the receiver. The mouthpiece of the telephone was not in contact with his mouth. Captain Hellweg was talking to someone over the telephone at that time. Witness saw a blue flame come from the receiver of the telephone and strike the Captain on the right side of the head. He was using the telephone at that time. It seemed to go right up against the side of his head and up over it. (R. 68)

Edwin G. Fraction testified that he was employed in the United States Naval Observatory as a messenger. On June 6, 1934 he had occasion to go into Captain Hellweg's office. There was an electrical and rain storm. Witness closed the west window and just after he closed the east window there was a sharp thunder and lightning, and a heavy clap. At the time when this great clap of thunder and lightning occurred, a bluish flame came from the telephone receiver of Captain Hellweg and came around the back of his head. Witness saw the flame come from the telephone receiver. (R. 75)

About 5 minutes after this occurrence plaintiff used the same telephone in his office, called the manager's office of the Decatur Section of the telephone company and described what had just happened. (R. 39)

He also called Mrs. Alderman and talked with her on the telephone. (R. 38)

The telephone operated at that time but it was hard to get a connection. Plaintiff had considerable difficulty in getting central to answer his telephone call and had difficulty in getting his own switchboard to answer. (R. 23-24)

Harry Ellsworth Cook, operator of the switchboard, testified that he continued to use that switchboard that afternoon. He got the calls and put them through properly. The switchboard was operating all right. He has operated that switchboard ever since. He had no trouble with it and it was not put out of commission that day. (R. 83)

The United States Naval Observatory, is a building about 200 feet long, and about 60 or 70 feet in depth. (R. 104) The entrance to the Observatory is at 34th Street and Massachusetts Avenue. (R. 21) To the southeast of the Observatory is the British Embassy. (R. 23) The Observatory building is constructed of brick, two stories in height, and basement. The roof is sheet copper. I-beams rest on the walls, and the ends of the beams are exposed in the wall in the attic. (R. 102)

The beams come in contact with the roof, but are not attached to it. They are attached to the roof through pipe hangers and pipes. (R. 103) There are 13 downspouts around the building which are made of copper, and they are soldered to the roof. The ends of the copper downspouts are led into wrought iron or cast iron pipe imbedded in the soil. (R. 137) Certain pipes and leaders, water leaders and things of that sort come in contact with the roof incidentally. (R. 120)

They may have been partially in contact with the roof, * * * they were to all intents and purposes in contact with the roof. There may have been a space there of one-thousandth of an inch, but they were in contact with the roof. (R. 128)

The defendant installed and maintained telephone equipment in the Observatory building.

The telephone cables carry pairs of wires, each copper wire is wrapped with paper or cotton insulation (R. 93), then around all of the wires there is additional insulation, and on the outside of that there is the lead sheathing. (R. 94)

The lead covered cables serving the Observatory are run in terra cotta or fibre ducts laid underground, and enter the basement of the Observatory. (R. 128) From the point of entrance into the basement the cables are run to a junction box about 10 or 15 feet distant. (R. 129) From the junction box in the basement the trunk cables run to the switchboard on the first floor. (R. 131) From the basement a cable is run in a flue or air shaft to a terminal in the attic. (R. 134)

From the terminal box in the attic the pairs of wires run to the various telephone stations in the building. The pairs of wires running from the terminal box in the attic to the telephone station are covered with the usual braided insulation known as No. 20, being 3/64″ rubber insulation with cotton braid covering. (R. 117)

One pair of wires ran from the junction box to the air shaft, then along the north and east wall of the room occupied by Captain Hellweg, and were laid down under the floor to his desk. (R. 28)

Captain Hellweg's office is on the second floor of the Observatory building. In the south wall there are double windows. There is a window in the east wall, and a window in the west wall. Captain Hellweg was sitting at his desk with his back to the double windows at the south. (R. 70)

Evidence of plaintiff as to alleged negligence of defendant.

In view of the fact that the only question to be considered on this record is the alleged error of the Court below in granting the motion of defendant, and directing a verdict for defendant, this appeal necessarily involves a consideration of all of the evidence relevant to the question of the alleged negligence of the defendant. This being the case, we have undertaken by this brief fairly to present the evidence adduced by plaintiff in the attempt to establish negligence of defendant, so as to simplify the consideration of the evidence on the question at issue.

Plaintiff, **Julius F. Hellweg,** testified that while he was using the telephone he does not know what happened, but felt this pain in his ear as if someone had stuck a needle or a long pin or something in it. He could feel it inside and was thrown back in his chair. (R. 21-22)

Immediately after this pain there was a terrific crash of lightning, or rather, the noise is thunder, that came through the southwest window in the direction of the British Embassy. The noise sounded as if is was down at the British Embassy, just in that direction. (R. 22)

The noise of thunder was heard from the southeast window and the British Embassy is in that direction, southeast. It was in the right ear that he felt the pain. (R. 23) Plaintiff saw nothing of any flame or spark when he felt this pain in his ear, no flash of any kind. Saw nothing. This thing hit him so quick it knocked him back in the chair. (R. 27)

On cross-examination plaintiff testified he did not see any lightning. He saw nothing. He had his back to the double windows (R. 41)

On redirect examination plaintiff testified that he does not think it is possible for him to tell how much time elapsed between the time he felt this pain in his ear and the time he heard the clap of thunder. When he felt the pain he was thrown back in the chair and grabbed his head, and when he was in that position that clap of thunder was then sounding. It was a very brief time, very short, it was seconds. (R. 55)

Dr. James Robertson testified that while plaintiff was talking on the telephone a blue streak came from the earpiece of the telephone and struck across the right ear of plaintiff, and he threw his head back. There was a blue streak, witness should say, from 3 inches or more, and that went back the side of plaintiff's head and he jumped back and put up his hands. He did not say a word at the time. He held his head and he looked strange. Witness noticed that the ear was red. The blue streak seemed to spread out over his head. Witness has seen a thing like that before, thinks he has. Thinks it was the color of arc lights. It was blue flame—that describes it better—that went from the receiver into his ear and he jumped back that way and put his hand on his head, and a little later he put both hands up to his head, and he said he had a very bad headache, throbbing headache. At the time Captain Hellweg was struck by this blue flame he was conversing with Mr. Dickey or witness. There was some lightning just before that, a few minutes, and it seemed just right afterwards there was a great clap of thunder, that is, that after plaintiff jumped back with his head in that way. An appreciable time after that there was a great clap of thunder and the flash of lightning in the direction of the British Embassy. When witness says it was an appreciable period of time, he means it is hard to guess that kind of time. It was not at the same time, but it was afterwards. A matter of seconds, from 5 to 20 seconds. (R. 58)

On cross-examination witness testified he was on the right side of plaintiff's desk, on the east side of the desk. Captain Hellweg's back was toward the south wall and he was facing north. Witness was on the east side of him and Mr. Dickey was sitting on the north side of the desk. (R. 60)

Witness noticed plaintiff stopped his conversation and called up central, he called a number, and they still were not ready and then he had some conversation with Mr. Dickey and witness, and it was during that time that this flash came across from the earpiece to his ear and his head went back. (R. 61)

Witness saw the flashes of lightning. When he first went into this room and was sitting down, there were some flashes of lightning to the south, and witness thinks there were some flashes before he left his room below there. (R. 61-62)

Before witness went into Captain Hellweg's room there had been lightning in the south, and while he was in the room there were other flashes to the south. Witness does not remember how many flashes of lightning he noticed before plaintiff undertook to use the telephone. All he can say is there were several. A few seconds before plaintiff undertook to use the telephone witness saw flashes of lightning. (R. 62)

Plaintiff began to use the telephone. There was a flash of lightning, and immediately afterwards a big clap of thunder; the thunder was accompanied by lightning. It seemed to witness he saw the lightning and heard the thunder about the same time, just right afterwards. The clap of thunder he heard immediately after the flashes. It seemed to follow the flash, but it was just after plaintiff jerked his head when witness saw the flame. (R. 63)

When witness saw the flame, then plaintiff jerked his head back and it seemed to witness about the same time that he heard the thunder—it was just afterwards. That is witness' recollection. It was something between 5 to 15 seconds, he thinks. It was from 5 to 15 seconds after plaintiff went back in his chair that witness saw the flash of lightning and heard the clap of thunder. Witness should say that plaintiff's ear was from 3 to 4 inches, somewhere along there, from the telephone receiver, at the time that witness saw this blue flame. He thinks he knows what an arc is, when two pieces like these arc lights come together. (R. 63)

On redirect examination witness testified he does not know the difference in color between lightning and static discharges going through the arc lights. The static discharges are blue and the color of lightning to his eye is white. (R. 67)

On recross-examination witness testified he is not an expert on electricity, and does not mean to say that all arcs are blue. If that is an arc the one he saw is blue. He does not know what it was. He knows it was a blue flame, and went from the receiver into plaintiff's ear. It was a blue flame that shot across from the earpiece. Witness saw lightning right after that. In the meantime there was a flash of lightning and a very heavy clap of thunder. The flash of lightning was from 5 to 20 seconds after witness saw the blue flame. He knows the blue flame went across there, or a streak or whatever it was. It was blue. Whatever he saw was blue. (R. 67)

Judd E. Dickey testified there was a blue flame came from the receiver of the telephone and struck the Captain on the right side of the head. He was using the telephone at that time. The receiver was not in contact with his ear. Witness would say that his ear was from 3 to 4 inches from the receiver. The mouthpiece of the telephone was not in contact with his mouth. Captain Hellweg was talking to someone over the telephone at that time. Witness assumes he was. He was writing and he was talking to somebody. As witness remembers it, Captain Hellweg was making an outgoing call. Witness does not know whether he had made connection with the party whom he was calling. As witness saw this flame, or whatever it was, it struck the side of plaintiff's head. It came from the receiver of the telephone. It was blue in color—a blue flame. It seemed to go right up against the side of his head and up over it. He grabbed his head and said he was in great pain. Immediately following that witness noticed that plaintiff's head or face was red; the whole side of his head and face, the right side. It covered the whole side of his head and face and up to the top of his head where there is no hair. You could see it. (R. 68)

On cross-examination witness testified he first noticed that lightning when he saw the blue flame come out of the receiver and hit plaintiff beside the head. Witness did not see any flashes of lightning while he was in the room. He did not see any flash or lightning before he saw this thing which he described as a blue flame, and he never saw any flash of lightning after that. He did hear thunder. That was an appreciable time after he saw the blue flame strike Captain Hellweg. By "an appreciable time", he means it was time enough to indicate that the lightning had struck some distance from the Observatory, if there had been any. That is all he heard. The time which elapsed between the time he saw this flame and the time he heard the thunder was probably a second or so. (R. 70-71)

Fraction, the colored messenger, had come in and closed the window before witness saw the flame. The west window was closed before he saw the flame. Fraction was still in the room. (R. 71)

Captain Hellweg had made a call on the telephone and was talking. Witness did hear him utter words which would indicate to witness that plaintiff had received his connection. Plaintiff had completed his connection and was talking with the party he had called. He had uttered a few words before witness saw the flame, enough to know that plaintiff was talking to somebody. Plaintiff stopped his conversation with witness and Dr. Robertson so as to telephone. He excused himself that he wanted to telephone. It was while plaintiff was talking that witness noticed this flame. Witness should say that plaintiff's ear was from 3 to 4 inches from the receiver. Witness saw a blue flame. That is all he can tell. It came on the side of plaintiff's head. (R. 72)

Edwin G. Fraction testified that around 4 o'clock in the afternoon he went into Captain Hellweg's office. There are four windows in that room, one in the extreme east, one on the extreme west and two on the extreme south. (R. 74)

Witness closed the west window, just after he closed the east window. After he closed the windows there was a sharp thunder and lightning, and a heavy clap. (R. 74-75)

After closing the west window witness was facing northeast. At that time, when this great clap of thunder and flash of lightning occurred, a bluish flame came from the telephone receiver to Captain Hellweg and came around the back of his head. Witness saw the blue flame come this way from the telephone receiver, and that flame covered the back part of Captain Hellweg's head from the right ear to the rear of the head.

At that time Captain Hellweg clasped his head as if he was in pain. (R. 75)

On cross-examination witness testified he came into the room and went over and closed the east window. Then he closed the windows in the south wall and then went over and closed the west window. It was around 4 o'clock when he went into Captain Hellweg's office. He heard the rumbling of thunder and the flash of lightning before he went into the office. The rain started to come in when he went in there. He saw Mr. Dickey and Dr. Robertson there. He saw the lightning after he had closed the west window. After he closed the west window he turned around and that is when he saw this flame come out of that telephone receiver. (R. 76)

He saw the flame come around the back of the Captain's head and he put his hands up on his head. (R. 77)

Harry Ellsworth Cook testified that he is on the switchboard at the Naval Observatory, and around 4 o'clock on the afternoon of June 6th received a telephone call from Captain Hellweg's office. (R. 77)

Received a signal on that particular occasion that Captain Hellweg wanted to use the telephone. He asked for a number. Witness answered the telephone and inserted a plug in a trunk line, and when central answered, he gave her the information. He gave the central operator the number and Captain Hellweg got that number.

Something unusual did happen at the time Captain Hellweg was in contact with the number witness had gotten for him. It was during an electrical storm. Captain Hellweg's light went up, and also several others. All lights did not go up. Several lights went up on the switchboard, including the one Captain Hellweg was using. When a telephone line is in use a signal lamp does not remain lighted. (R. 78)

At no time during witness' experience on the switchboard at the United States Naval Observatory during any electrical storm, or during any heavy rain-storm or thunder storm, had he at any time known the signal lamp of the line in use to light up while a connection had been made with another line. To his recollection he has not at any time while he was on that switchboard at the Naval Observatory during any heavy rain-storm or electrical storm or thunder ever seen the signal lamp on lines not in use that way. (R. 78-79)

Witness does not remember that the entire lines were in use on that particular switchboard at that particular time. Captain Hellweg's line was the only line in use at that time.

As near as witness can remember, he would say that he saw 4 or 5 lamps that were lighted up on that day. That is all he noticed at that time. They probably stayed lighted up a second or two seconds. He did hear unusual noises at that particular time. The kind of noise he heard was the noise that usually follows a sharp flash of lightning.

It was a sort of crashing noise. There were other noises in that switchboard at that particular time. The kind of noises he heard in the switchboard was a sort of a racket, a tearing noise like something there was tearing, as nearly as he can describe it—like tearing a piece of cloth, something like that. (R. 79)

On cross examination witness further testified that the signal lights on the switchboard are all white, with the exception of the superintendent's, which is red. On that switchboard in the Naval Observatory there are 25 local branches, 3 trunk lines and the Navy line, a direct line to the Navy Department. There are only 25 telephones on that switchboard in the Naval Observatory. At the time of this happening there were only 23. The Captain's number is No. 4, and that was a red light so as to distinguish it from the others. When Captain Hellweg took his hook off, that light lighted up on witness' board, and he put this other plug into the jack for the long outside lines, the cable lines, and when he put his plug into this jack No. 4, that connected witness with the Captain. Witness put the receiver up to his ear, and when Captain Hellweg told witness the number he wanted, witness would give it to him. Captain Hellweg gave witness the number and then he plugged in on the outside, the cable line, and that connection gave Captain Hellweg contact with the operator at the Decatur Exchange. Witness gave the operator the number Captain Hellweg wanted. As soon as witness inserted the plug the signal light went out. (R. 80)

As soon as you insert your plug and get connected with the operator the light goes out. After Captain Hellweg was connected, witness noticed several lights appeared on the Board. (R. 80-81) That was during that thunder storm. Witness would say that he noticed 4 or 5 lights, including the Captain's, that appeared on the board. If any other officers who had a telephone like this with the receiver on the hook would raise the receiver the light on witness' board would go on and the buzzer would go on. Witness does not know whether the lighting of the lights was caused by that. He has no means of knowing what caused it. The plugs were in on these other lights and the lighting of the lights momentarily could be caused by any of the other persons taking off the receiver of the telephone in their offices. It could be caused in that way.

For instance, say there was a lightning storm going on and the person raised the receiver up and decided not to telephone because of the thunder and the lightning and put it back, the lighting of the lamps would have happened as witness saw it. All the people in all the branches could leave the receiver off at the same time. That has happened. (R. 81)

Witness did not see any lightning through the windows. He saw a flash and heard the crackling noise. He saw these lights on the switchboard, but did not see a flash on the switchboard. He saw these lights light up. He said something about hearing some noise in the switchboard. He heard that when this flash of lightning occurred. He did not see a flash of lightning. He could see a reflection of it in the windows. He saw a reflection of the lightning through these windows in the room he was in, and he heard the thunder. (R. 82)

And then he heard this noise which was something like a tearing noise, like a noise like you were tearing a piece of canvas. He continued to use that switchboard that afternoon. He got calls, and put them through properly. The switchboard was operating all right. He has operated that switchboard ever since. He had no trouble with it and it was not put out of commission on that day. (R. 83)

On redirect examination the witness further testified:

At the time these lamps light up when someone is trying to get a connection at the switchboard, the buzzer rings simultaneously, if it is not turned out. Sometimes we have to turn it off temporarily. When these lights lighted up he does not remember whether or not the buzzer did ring. They sometimes have 4 or 5 calls waiting to be served. He never has had 4 or 5 lamps to light up at the same time unless someone raises their receiver. He never had 4 or 5 lamps light up and then have them go out at the same time. (R. 83)

On recross-examination the witness further testified he has had 4 or 5 persons at these several branches trying to get him at the same time and the way he knew they were trying to get him was because the board lighted up. If you call witness and tell him to get a number, while he is waiting to get the operator there may be 3 or 4 calls, and they have to wait for him. While those several lights are lighted, if those persons put back the receiver the light goes out. Witness does not know whether on this occasion he heard the buzzer. He has never had 4 or 5 lamps come on at one time and then hear the crackling noise through the switchboard. (R. 83)

Daniel W. Conway testified he is employed at the Naval Observatory as an electrician and has been so employed for about a year and a half. (R. 86)

Witness gives history of his prior employment as an electrician, and his employment by C. & P. Telephone Company of Baltimore for 14 years, from 1905 to 1919. (R. 86-7)

Testified that the only time that the signal lamps on the switchboard would light up while the circuit is plugged in, while there was a conversation going on while the circuit is connected, would be under abnormal conditions. By "abnormal conditions," he means for instance, the cable had given trouble, some wiring had been short-circuited or grounded. It could be caused by too much current coming into the switchboard. (R. 87)

Based upon a hypothetical question (R. 91-92), upon being asked what, in his opinion, caused the signal lamps to light up and the crackling noise and the tearing sound in the switchboard, witness answered, "Assuming that was the case, I would say that, of course, it was very abnormal conditions." By "abnormal conditions," witness means something that rarely ever happens; the case suggested in the question, something that rarely ever happens. In his opinion that was caused by excessive current. When he says "excessive current" he means excessive current coming into the switchboard through the means of the conductors leading into the switchboard. When he says "conductors leading into the switchboard," he means the wiring, that is, the telephone wiring. That is it, exactly. (R. 92)

Assuming that the noise coming from the switchboard was like the tearing of a piece of canvas, it is witness' opinion that it must be excessive voltage to cause such a noise. (R. 98)

Mrs. Marguerite Alderman testified that on June 6, 1934 she lived at 1814 24th Street. On that day, in the afternoon between 3:30 and 4:30, she received a telephone call at her home from Captain Hellweg. (R. 98)

When she answered the telephone it was Captain Hellweg's voice that she heard. Witness carried on the kind of a conversation with him enough to know that he wanted to speak to Mrs. Hellweg. What happened was just a big crash of lightning or thunder, a terrible noise and then witness could not hear anything. She did not hear any noise beside that of the thunder. She heard the first noise of the thunder. It was during the storm. She heard a big noise. It did seem to go from the wall, from the line. After that crash of thunder and lightning the phone did not work as it had before. When witness says, "the phone did not work as it had before", she meant she could not hear very well. She could not hear anything. She does not know how to explain it. She does not know if the electric buzzer rang, or something, anywhere. It wasn't any noise outside, but in the house. It was right in the phone. It was just after she had been talking to Captain Hellweg when she was trying to speak with him. (R. 99)

On cross-examination witness further testified when she went to the telephone she took up the receiver, put it to her ear and spoke to the person who was on the line and recognized the voice as that of Captain Hellweg. He first said, "Good evening, Mrs. Alderman. May I speak to my wife? I think she is with you." He may have asked witness how she was, and what you usually say on the telephone. Witness does not remember his exact words. She knows he was calling her because he wanted to speak to Madam Hellweg. Then witness took the receiver from her ear and went to call Madam Hellweg and she went to the telephone. Witness heard the thunder when she was first speaking with Captain Hellweg. She heard it at the time she was speaking with him. She never heard but one noise. It was a loud report of thunder. (R. 100)

George A. Gingras testified he is employed at the Naval Observatory as foreman of the upkeep section, having charge of the grounds and buildings, and taking care of the mechanics, laborers and guards. (R. 100)

Witness took photographs in the attic of the Observatory (Pltf's Exs. 4 to 12, inclusive). The photographs were taken under the instructions of Captain

Hellweg, who told him to take pictures of the telephone wires in the attic and the iron beams. (R. 104)

Witness testified he is familiar with the construction of the roof of the Observatory. The top of the roof is sheet copper. The roof is laid on iron beams which rest on the brick walls of the building. The ends—beam ends are right in the building. They are on two walls, the two center walls. That is the contact, itself. The ends of the beams are exposed. There are telephone wires right close to those beams, maybe within 2 inches, he thinks. There are points where the telephone wires are close to those beams. He does not know just exactly how many points, but he should say maybe half a dozen. (R. 102)

That was the same condition which existed in 1934. Thereupon the witness pointed out the exposed beam shown on the photograph (Pltf's Ex. No. 12). R. 102-3)

On photograph (Pltf's Ex. No. 8) there is an exposed beam which witness pointed out. Witness pointed out the exposed beam shown on photograph (Pltf's Ex. No. 7). Also on photograph (Pltf's Ex. No. 6).

Witness testified there are telephone wires that appear on photograph (Pltf's Ex. No. 6) which witness pointed out to the jury. There are telephone lines appearing on photographs (Pltf's Exs. Nos. 7 and 8) which witness pointed out to the jury. There are exposed beams and telephone wires appearing on photograph (Pltf's Ex. No. 9) which witness pointed out to the jury. The steel beams are commercial steel beams. The beams come in contact with the roof, but they are not attached to it. They are attached to it through pipe hangers and pipes. (R. 103)

On cross-examination witness further testified the marking on the wall shown on photograph (Pltf's Ex. No. 12) was made on the wall before he took the photograph. He was marking the path of the telephone wire. He could tell it was a telephone wire because outside of his equipment up there the rest is the telephone company's. He knew that was a telephone wire because it goes down to Captain Hellweg's telephone. It goes through an air duct through the walls, and to a molding and by the molding and down to his desk.

Witness has seen the telephone wire going into Captain Hellweg's box. Has seen the telephone wires going out through the floor. He did take up the floor. Witness had his wires there, enunciator wires. They run in the opposite direction from the telephone wire, and he took the board off and when the board was taken off he saw the telephone wires. (R. 105)

Photograph (Pltf's Ex. No. 12) shows the I-beam which is indicated as the white object on the wall. (R. 105) He does not know how far that wire shown in this photograph (Pltf's Ex. No. 12) is from the I-beam. He should imagine it was about three inches in that particular spot. It may be a little more than that, but it is close to that—he should think about 5 inches. That is a 4-inch beam and the wire is about 5 inches away. The wire which is shown by the white marking on this photograph (Pltf's Ex. No. 12) looks to be about 5 inches from the I-beam. That I-beam is not in contact with one of those pipes. That line which runs from the bottom to the top is the I-beam. It is not in contact with the pipe. Witness should think that the I-beam is about 3 or 4 inches from the pipe. This wire which is marked is the wire that goes out to Captain Hellweg's office. (R. 106)

On this photograph (Pltf's Ex. No. 6) witness has a white mark. That is the telephone wire and the one that is coming up from Captain Hellweg's office. This photograph (Pltf's Ex. No. 6) shows the ceiling. It is at a little different place in the attic.

On this photograph (Pltf's Ex. No. 6) he has marked a white line on it, and that is the line of the telephone wire that went into Captain Hellweg's office. (R. 106)

Photograph (Pltf's Ex. No. 9) shows a lead cable, a telephone cable that runs into the terminal box. From the terminal box come these wires which are shown in this bunch inside of the ring and they go up to the top of the attic. Witness has a white mark which indicates a bunch of telephone wires. (R. 107)

On photograph (Pltf's Ex. No. 7) the witness has marked a line going along up near the ceiling, and that is telephone wires. (R. 107)

The photograph (Pltf's Ex. No. 10) shows this junction box or terminal box which we have been talking about; and it shows the lead cable coming down to the box and then various wires coming to the station. That white line which witness has marked along to the left of this junction box, that is the telephone wires. They run down into the office and connect with this telephone. (R. 107-8)

Walter L. Simpson gave the history of his various employments and his engineering experience. (R. 108-116)

About six weeks before he testified, witness made an examination of the telephone wiring at the Observatory. This was done at the request of counsel for plaintiff. He examined the position of the telephone wires in the building from the basement to the attic, everywhere there was telephone equipment, examined the switchboard and the attic. (R. 116)

Photographs (Pltf's Exs. Nos. 4 to 12, inclusive) reasonably represent the position of the telephone wires in the Observatory on the day he made his examination. (R. 116)

Witness examined the roof. It is a metal roof, supported on a metal structure. He saw parts of the metal that are connected or rather attached to the roof at points below the roof. They are in the alley or attic hallways. They were the ends of the beams where they had been sawed off to make the attic alleyway high enough to walk in. The telephone wires entered the attic through an aperture in the attic. (R. 116)

That aperture was made in the basement, in the south wall of the hall. From that point they proceed to the ceiling line approximately of the attic. They are clipped at that point and go both ways to various terminals. Those lines are close to the ceiling in that areaway in the attic, most of them. Witness noticed exposed I-beams or metal beams at points near the wires. There were comparatively many points where those exposed metal points or I-beams were near the telephone wires in the attic. Does not remember offhand how many there were but can identify them. On photograph (Pltf's Ex. No. 6) there is shown the I-beam and the white represents the telephone wire. In some places the telephone wires are as close as 2 or 3 inches to the beams and in other places they are 5 to 6 inches. Witness noticed the type of insulation of these wires. They had the usual braid insulation, used for telephone wiring, a No. 20, with a 3/64″ rubber insulation with cotton braid superimposed thereon. (R. 117)

There are known or approved devices or appliances which will prevent excessive current of lightning from entering telephone lines that were not used out at the Naval Observatory for the telephone lines or equipment, as witness saw them recently when he made his inspection, assuming it was the same condition as it was on June 6, 1934. The known or approved appliances or devices that were not used by the telephone company back in 1934 were protector blocks—the lack of protector blocks. (R. 117)

A protector block is a porcelain block on which is mounted two fuses and a series of carbon blocks so designed as to lead foreign current off the line. These protector blocks are very usually placed at the entrance to the building where there are outside lines. As to whether witness is speaking of overhead or underground lines, witness said "overhead lines". Witness was asked the question where they are usually placed. His answer is based on conditions there, either overhead or underground, either one or the other, adequate protection.

Witness' answer was based on the assumption that this was an underground line coming into the Observatory.

He does not mean to say that this protector block must be put on the cable line. Under the conditions existing at the Observatory in 1934 to protect the subscriber in the use of a branch station, the protector block should be placed close to the desk stand. When witness speaks of the branch station, he refers to the desk stand. He did not find any protector block at the Observatory. (R. 118)

As to what other known or approved devices witness failed to find, his answer is that where wires pass metal bodies or anything that might conduct electricity they should be further protected by a porcelain tube insulation. A porcelain tube insulator is a tube made of porcelain through which the wire may be passed, where it passes through to be used in connection with insulated wires. You could use the porcelain; it is a tube. You could run the telephone wire through a tube where the wire goes along the wall. Witness is not speaking about wiring in this particular tube now, but he testified that there were exposed steel beams and metal beams; those metal beams are conductors of electricity. These telephone wires are in close proximity to these beams; they vary from 2 to 5 inches. (R. 118)

Where they were at a distance of 2 inches from these exposed beams, in his opinion, the telephone company did not use proper insulation along those exposed beams. The type of insulation the telephone company used was simply the regular twisted wire. The twisted pair of wires carried approximately 3/64″ of rubber insulation, and outside of that a cotton braid insulation. That will insulate against approximately 250 to 300 volts. Witness does not think that was sufficient insulation under the conditions which existed. In order to properly insulate telephone wires along those beams he would have placed porcelain tubes over the wires at those points, and the porcelain tubing is a thousand to one more than the ordinary insulation that they have. (R. 119)

As to whether there are other known or approved appliances or devices that witness failed to find, or that were not there, his answer is that there are several devices for protection against lightning that the telephone company just does not use. As to what territory he means, his answer is, anywhere. Those other devices are choke coils, a choke coil is a helix or wire which will retard the progress of lightning along the line. As to whether he is speaking about overhead wiring outside, he is speaking about any wiring on which lightning may enter. Lightning does get underground. It does not necessarily have to go through something overhead in order to get in there. When witness speaks about a coil he means a helix or choke coil. At this point the witness made a sketch of a helix or choke coil on the blackboard and described it. (R. 119)

They did not have any choke or helix coils out at the Naval Observatory. (R. 119)

As to what other known or approved appliances were not used at the Naval Observatory, well, the system is not thoroughly grounded. By that he means the telephone system. As to whether witness made an examination to determine if the telephone system was thoroughly grounded, he did not make an examination by the Wheatstone method because he had none available. He made a visual examination. The telephone system at the Observatory is not properly grounded, in that it has no protective device which would allow the lightning or other injurious current to travel to the ground without coming back through the exchange again. (R. 120)

The Naval Observatory building is not purposely grounded. Incidentally it is grounded. By "incidentally", he means that the building is a masonry wall construction, known as bearing walls. The roof is a metal roof on a substructure superimposed on that masonry structure. So that, there is no physical ground, as we know ground. That is, the roof itself being metal, it should be in connection with the ground. There is no such ground. Therefore, the roof itself is a separate entity electrically from the building. The building is incidentally grounded by certain pipes and leaders, water leaders and things of that sort, which come in contact with the roof incidentally. The masonry work, itself, is an incidental ground.

As to whether there are other known or approved appliances which were not used in the telephone system, why, he thinks that about covers the lack—the insulation, of course, as he stated, could have been much better. The insulation in the pipe walls themselves could have been better. That is, the tunnels and the ducts and what-not through which these wires pass. Insulation which he found existing was only the ordinary insulation which is carried by the wire, and by that, he means 3/64 of an inch rubber and this braid on the exterior.

As to how these wires should have been insulated which pass through the ducts, speaking of the tunnel ducts, he is speaking of the tunnel carrying the steam pipes, and he says in any instance where electric conductors come in contact with the various objects which are themselves conductors, it is sound practice to provide additional insulation against these things. In this event no additional insulation was provided, except in some few isolated sections. In his opinion the type of insulation which should have been used is loom, circular loom. (R. 120-121)

In describing circular loom, it is an insulation built up of a fibre, various types of fibre, by different manufacturers of loom, which is impregnated with asphalt and other insulating bodies. Other companies do make loom. The telephone people use it. It is used by the

American Telephone and Telegraph Company and all of its subsidiaries. The Chesapeake and Potomac Telephone Company of the District of Columbia is a subsidiary of the A. T. & T. Company, and they did not use it in this case. At the moment, witness does not think of any other known or approved appliances that in his opinion should have been used and were not used in the telephone lines existing at the Naval Observatory. (R. 121)

Witness further testified he had been sitting in the court room throughout the entire trial of the case and had heard all of the testimony, heard a description of this blue flame by Dr. Robertson, Mr. Dickey and the colored boy, Fraction, and witness can say from his experience that it was static electricity. Lightning electricity is a form of static. It is different from the generated electricity. It creates a spark, a gap between the Captain's ear and the receiver. (R. 121)

Witness heard the testimony about this switchboard, the testimony of the light flashing up, this noise which resembled the tearing of canvas and the rattling noise and the lighting up of these additional lamps. In his opinion the switchboard was caused to act in that manner by foreign current of some sort introduced into the system at the moment, and the noise was due to the relays closing. (R. 121-122)

Thereupon the following occurred:

> "By the Court:
>
> "Q. You have heard this testimony where it is stated that hardly any appreciable difference when the Captain experienced that thing; there was a loud clap of thunder—lightning followed by

this thunder. Do you associate that unusual occurrence with that lightning? A. It is quite possible, your Honor.

"Q. You do not know of any other reason for it, do you? A. No, sir.

"Q. No matter how much insulated that would happen just the same? A. No, your Honor; it would not.

"Q. Do you mean to tell me that the telephone people have been able to find some system whereby they could protect the telephone users? I mean, from lightning? A. Ninety-nine per cent of the time they can.

"Q. And they do not use it? A. They use it in an exchange. Very seldom do you hear of lightning getting into an exchange.

"Q. And is it practical to use it at other places? A. Yes.

"Q. Lightning is an act of God? A. Yes." (R. 122)

Describing the various ways and means lightning can enter telephone wires, witness testified lightning may enter a telephone wire by either a direct contact or it may enter it by an induction. As to how it would enter by induction, well, for instance, it hits a conductor of some sort, such as a metallic roof, and it would build up around that roof a field as it would be a condenser. The roof would act as one side of a condenser and when the potential of one side of the condenser is built up to a certain point it will break down and anything in that path would have an induced current within the conductor; so that the telephone wire in that field would carry an induced current. (R. 123)

Thereupon the following occurred:

"By the Court:

"Q. May I ask notwithstanding, how they were properly insulated, even if they were insulated with the insulation in that porcelain thing, does not the same result follow which you have mentioned if it was located in the manner you say and if it hit the roof? A. If the porcelain was adjacent to the points of contact, the possibility would be very remote that it would enter the telephone line.

"Q. But there still remains the possibility that it could enter under those circumstances? A. Your Honor, I can not answer positively under all conditions.

"Q. Under ordinary conditions, is that true? A. That is true.

"Q. Electric science has not progressed to that extent, that you control it? A. We can control it.

"The Court: If you could control it, it would not have the effect you are speaking of.

"Mr. Bettelman: You can control lightning?

"Mr. Hoover: Let him tell how it can be controlled.

"By Mr. Bettelman:

"Q. How can it be controlled? A. It can be controlled by numerous devices which we use.

"Q. What are some of those devices? A. Proper insulation and proper grounding of the system which we are trying to protect, and those devices are in use in the various systems in which they are introduced.

"Q. Are they introduced in any telephone system?

"Mr. Hoover: I object to that. We are talking about a telephone system which we have here. He tells us about the various devices and he said that is all he knew about it.

> "By the Court:
>
> "Q. What was this thing—what do you call it? A. A helix or choke coil.
>
> "Mr. Hoover: He gave three instances, the helix, the protector block and the loom, and he said that was all he knew.
>
> "The witness: No. I think, if I made that statement, I did not intend to mean that is all I knew.
>
> "Mr. Hoover: You were asked the question if you knew of any others and you said, after studying quite a while, 'No.'
>
> "The witness: I meant by that that the arresters covered that field. There are different kinds of arresters." (R. 123-124)

Witness testified he knows of other telephone companies in the United States that use known or approved appliances that were not used at the Naval Observatory under conditions exactly as they are here. The names of some of those companies are: The Southern Bell, with headquarters at Atlanta; the other is the Central Union; that covers the Middle Western states; the Pacific which covers the Pacific states; the Cumberland which covers the Southern states; I would say generally all their subsidiaries. (R. 124-125)

As to whether they have what these people do not have, these people have them. These people have them too, but not in that particular insulation. The Chesapeake and Potomac Telephone Company have them also, but did not have them in the particular insulation. Witness means to say that other companies do have them in certain instances, in situations similar to this. (R. 125)

On cross-examination the witness testified that since 1917 he has had no direct employment by a telephone or telegraph company, but has been in a position to observe and keep up with the telephone trend since that time. Has had no work with a telephone company since 1917. (R. 127)

Witness went out to the Naval Observatory to make an inspection about six weeks ago. He made an inspection of the cables and the wires in the Naval Observatory. The cables get into the Naval Observatory from underground so far as he could determine. He did ascertain how they got there. He was shown by the electrician at the Naval Observatory where the cables came into the building in which Captain Hellweg had his office. He did not trace the cables from that point. He did not trace the cables outside. He does not know how they came from the manhole or conduit lines over on Massachusetts Avenue. Does not know how they got to the building, the Observatory building, except that they came underground. They came in in the basement. He saw where they came in. He was able to identify the telephone cable coming into the Naval Observatory building because of his knowledge of telephone cables. He saw the part of the basement where they came in. He knew it was a telephone cable simply because it followed the system all the way through. The place where he saw it enter the Observatory building was in the basement. It came from the outside through the duct. It was a terra cotta duct with some 6 or 8 cells, or it might have been a fibre duct with one cell. Actually he did not pay any attention to the duct, the material in the duct. He saw the duct. He was not interested in the duct. He was interested in tracing the cable. The leads came from the cable to the various terminals in the telephone system. It was at the junction box in the basement that the leads came off the cable. He should say that the cable box was probably 10 or 15 feet from the place where the cables entered the building. (R. 128-129)

Witness was asked to view the insulation. He made an examination to determine if possible what might have caused this accident. He examined the installation purely from an insulation standpoint. (R. 129)

The cable was hung by the regular cable hangers. It was hung on the wall near the ceiling. He was not interested in what leads came off the cables. He was interested in the insulation, interested in whether or not it was grounded. Witness testified that the cable system was not properly grounded, speaking of the whole system and not of an individual part. He did examine this cable from the point where it came into the Observatory to the point where it went to the junction box, to see whether or not there were any grounds on it. A ground is made by grounding it to the sheath. A sheath is a lead covering, the lead covering on the cable. It is grounded by wrapping a conductor around it and carrying it to the ground. It is usually carried to the ground by grounding it to a water pipe or a steam pipe, or driving a rod in the ground. **He did not examine this cable from the place where it came into the Observatory to the place where it went into the junction box to see whether it was grounded to any of the water pipes in this building. He does not know whether it was grounded or not. He was not interested in that because the cable is probably grounded anyway.** (R. 130)

The cable is grounded outside when it is in the ducts and presumably it was grounded outside at every point until it entered the building. We presume that when

you put a cable in the duct in the ground it is grounded, but I do not know that it is grounded. (R. 130-131)

Witness testified that running cables in the duct in the ground is the method which is in common and general use for general work. He did not examine this cable running from the place where it entered the Observatory to the junction box in the basement to see whether that cable was grounded. He did notice, at a point, a metal clamp. In making the ground you take a metal clamp and secure that clamp tight around the cable. That is lead-covered and then you take the other end of the wire to your clamp and clamp that around a water pipe.

As to whether he saw any such grounding as that, it was probably there. He was not interested in the grounding of the sheath of the cable because it would be grounded anyway, presumably. He did not mean to say that this cable system was not properly grounded in the building. Whatever he said about the grounding relates to the twisted wire rather than the cable. (R. 131)

Photograph (Pltf's Ex. No. 20) shows the terminal box in the attic. On one side of the terminal box is the cable. On the other side the twisted wires. They lead off below the terminal box, go through a ring and then they go in a bunch and go up over these pipes. Witness notices that over the pipes the wires have a black cover. That black cover is a tape. It is known as friction tape or insulation. This bunch of wires which witness sees on the left-hand side is the twisted pair. Each of them is a pair, and each of these twisted wires contain a pair that go to each of the stations that is served by this terminal box in the attic. (R. 132)

As to whether he testified on direct examination that he examined this plant and that the cable system and the wiring system was not properly grounded, his answer is that he said "the system". He said both. He will stick to that statement. That cable system and the wiring system was not properly grounded. He said he examined the cable system to see if it was grounded and he said it was not grounded. Talking about the cable system in the house he will say it was not grounded. He knows it was not properly grounded by a physical examination. The physical examination he made to see if there were any grounds on it, was he went along the system from point to point. He went along the system to see if it had proper grounds. (R. 133)

Witness described what he did in the way of tracing the cable from the junction box in the basement to the switchboard, and testified he would not say it was not grounded, but he does not remember just where the junction boxes were located. This cable that came in through that building is grounded in the long lines cabinet in this little room and possibly did go from there to this junction box in the basement and then go up from the junction box to the switchboard that is outside in the hall. He does not know whether it did or not. He did not examine it to see. He was not interested. (R. 133-134)

Witness described what he did in the way of tracing the cable and twisted wires shown in the photograph (Pltf's Ex. No. 20) and the twisted wire leading to Captain Hellweg's office, shown in photograph (Pltf's Ex. No. 13). **(R. 134-135)**

Witness made a drawing on the blackboard and described the roof of the Observatory building. (R. 135-

136) He testified the roof is presumably made of copper. He did not test it to see but thinks it is made of copper. Copper is one of the best known conductors of electricity. When he testified that the building was not purposely grounded, he meant that there was no actual ground leading from that roof to the ground. He looked at it and found no deliberate ground. By that he means it was not purposely put there to ground that roof. If it is soldered to a roof and a ground rod put in, it must be purposely put there. This copper roof does not have gutters at the end of it. It does not have downspouts. (R. 136)

Witness knows as a fact that the roof has 13 downspouts around the building, and that those downspouts are made of copper and that the copper is soldered to the roof itself. He knows that the ends of the copper downspouts are led into a wrought iron or cast iron pipe but that still is not a deliberate ground. What he means by a "deliberate ground" is that they may have been put in actually for this purpose. This building was not thoroughly grounded. It could have had a positive ground on that roof. By a "positive ground" he means for instance, a piece of lightning rod wire soldered to the roof actually driven into the ground with a ground rod. That would be a better ground and connected with a wrought iron pipe. As to whether it would give a better conductor, witness might qualify that by saying that it is not recognized by the underwriters as being a ground. He did not say it would not carry off the electricity. He said it would not always do so. It would not have grounded the building so as to have protected it from current getting inside. Current could have gotten inside by several means. It could have gotten in there directly by coming in the roof structure. It naturally would follow the metal roof structure. And that led partially to the downspouts. (R. 137)

Witness was asked if he had not testified yesterday that there were water pipes and leaders in contact with the roof, and he answered, "adjacent to the roof". They may have been partially in contact with it. He did not slip a gauge in between to see if they were in contact with the roof. Presumably they were in contact with the roof. He cannot say whether they were or were not in contact with the roof. They were, to all intents and purposes, in contact with the roof. When witness said they were in contact with the roof, he wanted the jury to understand that they were in contact, but counsel said actually. There is a great deal of difference between contact and "actually". There is a great deal of difference. There might be a space there only one-thousandth of an inch. When witness talks about contacts, he means they were in contact. They were in contact to all intents and purposes. These water pipes and leaders, as witness calls them, were in contact with the roof. He testified yesterday that these wires, or the pair of wires which led to Captain Hellweg's office were at a distance from 2 to 5 inches from the I-beams, from the ends of the beams, that is from the I-beams themselves, or any part of the I-beams.

Thereupon the witness was handed the photographs (Pltf's Exs. Nos. 4 to 12, inclusive) and was asked to trace out this line of the wire from the place where it comes out of the junction box and goes up to the ceiling from that point over to the place where it goes into the flue and to tell how many of these I-beams it passes, as shown by those photographs, and then to indicate

the number of the photographs on which it is shown passing the I-beams. After having examined the photographs, witness answered: On Plaintiff's Exhibit No. 6 it is shown on the photograph at the point marked by the witness; and then it crosses over the one on the photograph (Pltf's Ex. No. 8). (R. 138)

Exhibit 8 shows what is termed a clock terminal near the I-beam, but the wire itself is away from the I-beam, that is, the telephone wire; the telephone wire is about, he would say, probably 6 inches. He is not positive whether that is an I-beam or not, but thinks that is probably masonry. He thinks it is probably masonry and not an I-beam.

The I-beam shown on photograph (Pltf's Ex. No. 12) is identical with the I-beam shown on Exhibit No. 6. It is the same I-beam shown on both pictures.

That seems to be all that he can identify. He can only identify these two pictures, No. 6 and No. 12, which show the same I-beam which is one I-beam, and then the other picture which he has identified as picture No. 7, which shows an I-beam, with the clock terminal near the I-beam, and the telephone wire is about 6 inches away from the I-beam. Mr. Gingras painted these I-beams white so as to show up in these photographs. (R. 139)

Witness said yesterday he was familiar with the specifications which required insulation where the wire passes metal pieces. Those were the specifications of the American Telephone & Telegraph Company.

Thereupon there was handed to witness a pamphlet marked, **"American Telephone & Telegraph Company Specifications 3853, March 1, 1917,"** and after examining it, the witness testified: **That is the specification to which he had reference.** That specification, or one similar to it was in effect at the time he was engaged in the telephone work. (R. 139)

Thereupon the **attention of witness was called to Section 21, on page 27 of the pamphlet, which reads:** "Crossing or parallelling other wires or metallic objects", and on the left side it reads: "Gas pipes, electric light conduit, metalwork, electrical bell or other signalling wires, or telephone wires not connected to same protector. Wire within one-half inch apply one layer of rubber tape and one layer of friction tape on woven conduit to inside wire, except where inside wire is in conduit, molding, or shaft."

Witness testified: **That is the specification which applies to the condition that we have here, where these twisted wires pass the I-beams; that is their specification. Their specification provides for this additional taping or insulation in case it is within one-half inch of the other metal.**

Attention of witness was called to his testimony in which he testified that these specifications required that porcelain tubes be used under such conditions as existed here, namely, with these twisted wires from 2 to 5 inches away from these metal pieces or the iron beams, and he was asked if he could find that there in these specifications, and witness answered: He did **not think** he testified that these specifications required them to be from 2 to 5 inches. Porcelain tubes were used by the telephone company. **He did testify that these twisted wires, or these wires, which went to the Captain's office, that is, the Captain's desk, he found them to be from 2 to 5 inches away from the I-beam. He does not think that he even testified that according to the specifications of the A. T. & T. they should have been insulated by applying porcelain tubing. By**

that he means that is his private opinion as an individual.

Witness has looked at the specifications of the A. T. & T. which were handed to counsel for plaintiff, but he does not know who wrote it. He had one when he worked for the telephone company and it was similar to this one. As to whether he finds anything in here that requires the use of porcelain tubing under conditions such as he found in this observatory building, with the twisted wires from 2 to 5 inches from the I-beam in the attic, his answer is, only where it crosses pipes or is adjacent to pipes. (R. 140)

As to whether he finds any specification in there which requires the use of porcelain tubing under the conditions such as we have here, namely, that this twisted wire ran from 2 to 5 inches in the attic, his answer is "No," not to the I-beam. (R. 140-141)

These telephone wires from the attic to the basement are in a lead-covered cable.

Thereupon witness was shown photograph (Pltf's Ex. No. 20) which shows the cable going from the junction box, running along the wall over to the shaft and down to the basement, and he testified: That is the lead covering. Where it ran from the attic to the station in the Captain's room, it is generally known as twisted wire, and witness said it was No. 20 and had a 3/64 rubber insulation. The wires which are in the cable have some paper and some cotton insulation, and where you have a twisted wire covered with braid, such as the wire in the attic, it has rubber insulation in order to make it partially impervious to water. It is not principally for that purpose, but it operates to help avoid mechanical injury. It insulates in the first place, and then it protects it from contact with outside contacts or from water. (R. 141)

Witness spoke about this protector block which has fuses. In connection with this protector block you also use a ground.

Thereupon there was handed to the witness a specimen of protector block, and after examining it, he testified: **That is the thing he has been talking about. That is the protector block.** Thereupon the witness described the protector block and the manner in which it operates. (R. 141-142)

Witness testified it is a fact that the protector block such as the one shown to witness, and the one as to which he testified is only used where you have exposed aerial wire or cable; and that is only used where you come into the house, for instance; it may be on the outside of the house or inside. That is common practice. **He has never known of a protector block such as this being used inside a place where you had P. B. X. and to a station running from the terminal box in the attic to the station such as Captain Hellweg's station in this case. It is seldom, if ever, used in underground construction, at all.** He has seen it used on long lines after they came out of the underground. By "long lines," he means where the station is isolated from other places. He means where it is not quite underground, where it is connected with the overhead rather than underground, and that is what it is used for. (R. 143)

When witness testified yesterday that the protector block should be placed as close to the desk stand as possible, referring to the desk stand of the Captain, he meant by that, to afford full protection to the person using the telephone, it should be placed as close to the stand as possible. It is not common and general practice to do that. As to whether that is simply witness' individual idea about it, he does not know that it is his individual idea. It is a matter of fact.

Witness does not know of any case in general or common use in telephone construction and maintenance that a protector block, such as this is used in a case such as we have here where you have a P. B. X. and a pair of wires coming off from the terminal box in the attic and running from this station into the protector block, such as the wire running from the terminal box in the attic to the station at the Captain's desk. (R. 143)

Thereupon there was handed to the witness a piece of porcelain tubing and after having examined it, he testified: That is what he referred to as porcelain tubing, or similar to that. When he said that this porcelain tubing insulation was a thousand times the insulation we have on twisted wires, he meant it was a thousand times more resistant, depending on the insulation tubing. (R. 143-144)

Witness testified yesterday that there were several devices for protection against lightning that the telephone company just does not use, and one he mentioned was this choke coil or helix, that is, to subscribers' stations. Witness has not had any knowledge or experience in telephone construction or maintenance where these choke coils were used on a subscriber's station on a layout such as we have in the Naval Observatory. (R. 144)

Witness testified that **a circular loom is a tube woven out of some fibrous material, and then impregnated with asphalt or some insulating compound so that it forms a flexible tube through which a wire may be passed.** It would be a tube similar to the porcelain tube, except that instead of being made out of porcelain it would be made out of some cotton or wool fibre; and then it would be impregnated with asphalt or some other insulating material, and the wires would run in that.

Thereupon witness was handed the handbook of the American Telephone and Telegraph Company, Specification No. 3853, and was asked if he could find any place in there with respect to the use of this loom and the conditions under which the loom would be used, and, after having examined the book, he testified, they speak of it as a woven conduit, which is the same thing.

Thereupon, witness was asked to read from the book the specifications about the use of that woven conduit or loom, and he read as follows: "Woven conduit should always be secured by tape, clamp or fastener."

Witness testified: That is all it seems to say about it. (R. 149)

Thereupon the following occurred:

> "Q. Do you find anything in there where it says that this woven conduit or loom should be used to cover those wires, such as the wires in this running from this terminal box down to Captain Hellweg's desk? A. No special mention.
>
> "Q. Is there any mention at all? A. The picture itself shows it.
>
> "Q. What picture? A. Coming out of the loom.
>
> "Q. But I mean to say, the conditions under which that is used? A. No.
>
> "Q. It does not show that this loom or the woven conduit should be used from these twisted wires in that branch which ran from the terminal box to Captain Hellweg's station? A. No. It does not show it there.
>
> "Q. It does not specify it shall be used in such conditions as that? A. No." (R. 150)

Attention of witness was called to the testimony of the witness Cook as to the lights lighting up on the switchboard and the noise which he likened unto a rattling sound or a sound resembling the tearing of canvas, and he testified that in his opinion that was caused by some foreign current being introduced in the system at the moment and the noise was due to the relays closing. (R. 152)

Witness testified he is generally familiar with the switchboard in the Naval Observatory, the construction of it. He looked at the switchboard. **The switchboard is grounded and the grounding of the switchboard grounds all the wires that run to the switchboard. It grounds one side of it. As to which side it does ground, it all depends on which side is grounded. He does not know which side is grounded. Under certain conditions they are all grounded. If it was grounded all the time it would not operate. There is a ground there all the time, but it is only operative when the relays are connected.** Witness said that this tearing sound in his judgment was made by the relays. (R. 152-153)

Thereupon, the following occurred:

> "The Court. I would like to ask you a question or two.
>
> "By the Court:
>
> 'Q. You said you heard all of this testimony here, and you heard at the time this happened there was this loud crash of thunder and there was lightning going on at the time this happened? A. Yes.
>
> "Q. What caused this? A. What caused this whole proposition?
>
> "Q. Yes. **What was the primary cause? What put it in motion? In other words, if there had not**

been any lightning there would have been no accident? A. That is my opinion.

> "By Mr. Bettelman:
>
> "Q. Would you say that was definitely due to the lightning. A. I could not say that.
>
> "By the Court:
>
> "Q. What else could it be due to? You have all the known facts? A. **I know the facts and in my opinion, sir, it was lightning.** What I meant to say was that I could not say it positively because I was not there." (R. 158)

The foregoing is the evidence upon which the plaintiff claims he was entitled to have the question of the negligence of defendant submitted to the jury.

Motion of defendant for a directed verdict, and instruction of the Court to the jury directing a verdict for defendant.

At the conclusion of the evidence offered by plaintiff, counsel for defendant moved the Court to instruct the jury to return a verdict for the defendant on the ground that there was no evidence in the case of negligence of the defendant which the Court could submit to the jury, and upon which the jury under the law could make a finding, that the defendant was guilty of negligence in causing the injury complained of by plaintiff. (R. 182)

At the conclusion of the arguments of counsel in support of and in opposition to said motion, the Court instructed the jury as follows:

> "The Court: Ladies and gentlemen of the jury, I have been listening to a motion made by the defendant asking me to direct this jury to return

a verdict in favor of the defendant. Those motions are frequently made and when made challenge the judgment of the Court.

"You have heard this evidence. It appears that Captain Hellweg, the plaintiff, was undertaking to put through a telephone call and he received a shock which caused him to sustain the injuries which you have heard about.

"At that time, while he was listening to the telephone, there was an electric display with lightning about it, and the assumption is, of course, that the lightning apparently got on the telephone wires in some manner and thereby caused that blue flame to hit the Captain's ear and caused these injuries.

"Of course, lightning is an act of God. No human being can control that, and when an act of God becomes the sole cause of an injury to another no one can be held responsible for that.

"The plaintiff has undertaken to prove certain specific acts of negligence on the part of this defendant as to the manner in which this telephone system was installed and maintained. He relies on the testimony of Colonel Simpson and Colonel Simpson has testified—I am speaking generally—that the Telephone Company failed to use a protector. That was a porcelain device which was introduced in evidence which had two fuses. Also that it failed to use a helix. This was that circular wire thing which I think you saw on the board which kept out the lightning. Also that the Telephone Company failed to insulate certain wires put there in the attic with this porcelain tubing and also to use this material called loom for insulation purposes. Loom, as you recall, is a fabric impregnated with asphalt or some other material or insulation. I think I have covered the various things.

"Now, the duty of this defendant Telephone Company was not that of an insurer. It was not required to exercise the highest degree of care in the manner in which it installed and maintained this telephone equipment at the Naval Observatory. It was called upon to use the care that an ordinarily prudent company would have exercised under the same circumstances, and that is that they would make use of and install the well known and approved appliances customarily used under the same circumstances by telephone people.

"The Colonel as a witness gave his personal opinion that they should have used a protector block, as I recall the testimony he said that should be used near the desk where the telephone is, where the subscriber sat, and yet on cross examination he frankly admitted that that never was done by The Telephone Company and under such circumstances as existed at the Naval Observatory. He also talked about this helix coil, but he says that was neved used on a subscriber's equipment or in a situation like that at the Naval Observatory, and that was also true of his testimony with regard to these particular porcelain tubes. In other words, he expressed his opinion that this and that should have been done, but he does not testify that this defendant here failed to use the well known and approved appliances which were customarily used under the circumstances existing here.

"So, therefore, the attempts on the part of this plaintiff to prove specific acts of negligence on the part of this defendant have failed, and it leaves us only with the fact of the lightning, and so far as you and I know that was the sole cause of this unfortunate accident to Captain Hellweg. There is no proof of any specific act of negligence which concurred and cooperated with the lightning to produce the injury complained of.

"So, with that situation before us, with an act of God established, there is nobody to say that it was not the sole cause of this thing, and the burden being upon the plaintiff to prove his case by a preponderance of the evidence, I find there is a failure of proof of negligence here, and your verdict must be for the defendant, and I therefore direct that that be your verdict." (R. 182-184)

ARGUMENT.

I.

The evidence of plaintiff does not even tend to show that the negligence of the defendant caused the injury to the plaintiff, and the Court below did not err in directing a verdict for the defendant.

At the outset it should be made plain that on the facts of this case the law is well settled, (1) that the only duty imposed upon defendant was that of exercising the care and caution of a reasonably prudent man or corporation in like circumstances in installing and maintaining in connection with its wires and instruments in the Naval Observatory such known and approved appliances as are reasonably necessary to safeguard against injury; (2) the burden is imposed upon plaintiff to show that defendant negligently failed to install and maintain in connection with its telephone system in the Naval Observatory such known and approved appliances as a reasonably careful and prudent man or corporation, engaged in a like business, would consider reasonably necessary to safeguard against injury.

At the trial of the case in the Court below plaintiff, evidently appreciating that the duty was imposed upon him of establishing that the defendant was negligent, offered evidence in the attempt to show that the defendant failed to install and maintain in the Naval Observatory such known and approved appliances as are reasonably necessary to safeguard against injury.

In the attempt to meet the obligation imposed upon him of establishing that the defendant was guilty of negligence, plaintiff testified that while using the telephone in his office in the Naval Observatory on June 6, 1934, he felt a pain in his right ear as if someone had stuck a needle or a long pin or something in it. He could feel it inside, and was thrown back in his chair. (R. 21-22)

Dr. James Robertson, a witness called by plaintiff, testified that while the telephone receiver was about 3 or 4 inches from Captain Hellweg's head (R. 57) a blue flame came from the earpiece of the telephone, jumped the space of 3 or 4 inches and seemed to spread over the head of plaintiff. Right afterwards, a matter of 5 to 20 seconds, there was a great clap of thunder and a flash of lightning. (R. 58)

Judd E. Dickey, a witness called by plaintiff, testified plaintiff's ear was 3 or 4 inches from the telephone receiver. Witness saw a blue flame come from the receiver of the telephone and strike plaintiff on the right side of the head. He was using the telephone at that time. (R. 68)

Edwin G. Fraction, a witness called by plaintiff, testified that there was an electrical and rainstorm, and thunder and lightning. At the time when this great clap of thunder and lightning occurred, a bluish flame came from the telephone receiver and came around the back of plaintiff's head. (R. 75)

Walter L. Simpson, called as an expert witness by plaintiff, testified he had been sitting in the court room throughout the entire trial of the case, heard the description of this blue flame by witnesses Robertson, Dickey and Fraction, and can say from his experience that it was static electricity. Lightning electricity is a form of static. It is different from generated electricity. It creates a spark, a gap between the Captain's ear and the receiver. (R. 121) He does not know of any reason for the thing that Captain Hellweg experienced, other than lightning. (R. 122)

In the attempt to prove that the defendant was negligent, plaintiff called as a witness **Harry Ellsworth Cook**, who testified that he was operating the switchboard at the Naval Observatory at the time plaintiff was injured. (R. 77) He testified that while plaintiff was using the telephone, 4 or 5 lamps lighted up on the switchboard, and he heard noises in the switchboard, a sort of racket, a tearing noise, like something there was tearing, as near as he can describe it—like tearing a piece of cloth, something like that. (R. 79)

Daniel W. Conway, an electrician employed at the Naval Observatory, testified that the lighting of the signal lamps, and the crackling noise and tearing sound in the switchboard was caused by excessive current. (R. 92)

George A. Gingras, foreman of the upkeep section of the Naval Observatory, testified that under the instructions of plaintiff he made photographs in the attic of the Naval Observatory of the telephone wires and iron beams (Pltf's Exs. Nos. 4 to 12, inclusive). (R. 104)

By the testimony of the expert witness **Simpson** plaintiff offered evidence in the attempt to establish that defendant was negligent in that it failed to install and maintain in connection with its wires and instruments in the Naval Observatory such known and approved appliances as are reasonably necessary to safeguard against injury.

We maintain that the evidence of plaintiff does not even tend to show that defendant was negligent in that it failed to install and maintain such known and approved appliances as are reasonably necessary to safeguard against injury.

While it is true that the witness **Simpson**, on direct examination, testified concerning appliances described by him as (1) porcelain tubing (R. 118); (2) protector blocks (R. 117-118); (3) helix or choke coil (R. 119); (4) circular loom (R. 121); and (5) grounding of the telephone system (R. 120), nevertheless, on cross examination he testified (as hereinafter more particularly pointed out) that none of the appliances described by him were known or approved appliances such as are reasonably necessary to safeguard against injury under the conditions shown by the evidence in this case. In fact, his testimony is clear to the point that no one of the appliances described by him would have been installed and maintained at the Naval Observatory by a reasonably prudent man or corporation as reasonably necessary to safeguard against injury.

On the brief of plaintiff (P. 10-11) it is argued that among those known and approved devices and appliances which should have been used at the Naval Observatory to prevent injury to persons or property from lightning or foreign current, were: (1) Porcelain tubing; (2) Protector blocks; (3) Helix or choke coils; (4) Loom insulation; and (5) Ground of the telephone system.

It is then argued that the testimony of plaintiff tended to show:

> "1. The defendant failed to use *porcelain tubing* as additional insulation for the telephone wiring where such wiring passed near conductors of electricity, namely, in the instant case, the exposed steel I-Beams in the attic of the Naval Observatory which I-Beams were in direct contact with the copper roof of the Observatory (R. 116-119, 136, 140), and that copper is one of the best known conductors of electricity (R. 136, 137)." (Appellant's Brief, p. 11).

The only testimony in the case as to whether porcelain tubing should have been used at the Naval Observatory to prevent injury to persons or property from lightning or foreign current, is that of witness **Walter L. Simpson**, who made an examination of the telephone wiring of defendant at the Naval Observatory. (R. 116)

On cross-examination, witness **Simpson** testified that he does not think that he even testified on direct examination that according to the specifications of the A. T. & T. the wires should have been insulated by applying porcelain tubing. By that he means that is his private opinion as an individual.

Witness examined the specifications of the A. T. & T. and testified he had one of the specifications when he worked for the telephone company and it was similar to the one handed to him. As to whether he finds anything in that specification that requires the use of porcelain tubing under conditions such as he found in the Observatory building, with the twisted wires from 2 to 5 inches from the I-beam in the attic, his answer is only where it crosses pipes or is adjacent to pipes. (R. 140)

He was then asked whether he was able to find anything in the specifications which requires the use of porcelain tubing under the conditions such as existed in this case, that is, where the wire ran from 2 to 5 inches from the I-beams in the attic, and he answered, "No", not to the I-beam. (R. 140-141)

We maintain that the foregoing testimony of this witness utterly refutes the claim of the plaintiff that there was evidence which properly could have been submitted to the jury, and on which the jury properly could have made a finding, that defendant was negligent in failing to encase the wires in porcelain tubing in the attic.

Again, plaintiff argues that the testimony tended to show:

> "2. The defendant failed to use *protector blocks* which should have been installed as closely as possible to the telephone set on the plaintiff's desk (R. 117-118, 141, 143)." (Appellant's Brief, p. **11)**.

In support of this claim plaintiff again relies upon the testimony of witness **Simpson.**

On cross-examination, he testified it is a fact that the protector block such as the one shown to him, and the one as to which he testified, is only used where you have exposed aerial wire or cable; and that is only used where you come into the house, for instance; it may be on the outside of the house or inside. That is common practice. **Witness has never known of a protector block such as this being used inside a place where you have a P. B. X. and to a station running from the terminal box in the attic to the station such**

as Captain Hellweg's station in this case. It is seldom, if ever, used in underground construction at all. (R. 143)

He further testified that **he does not know of any case in general or common use in telephone construction and maintenance that a protector block such as this is used in a case such as we have here, where you have a P. B. X. and a pair of wires coming off from the terminal box in the attic and running from this station into the protector block such as the wire running from the terminal box in the attic to the station at the Captain's desk.** (R. 143)

We submit that the testimony of the witness **Simpson** absolutely refutes the claim of plaintiff. We likewise maintain that there is no evidence which properly could have been submitted to the jury, and on which the jury properly could have made a finding, that defendant was guilty of negligence in failing to install in the Naval Observatory a protector block to prevent injury to persons or property from lightning or foreign current.

Next, plaintiff argues that the testimony tended to show:

> "3. The defendant failed to use *helix* or *choke coils* which should have been attached to and become a part of the telephone wiring (R. 119, 144, 156)." (Appellant's Brief, p. 11).

On cross-examination, witness **Simpson** testified that yesterday on direct examination he had testified that there were several devices for protection against lightning that the telephone company just does not use, and one he mentioned was this choke coil or helix, that is to the subscribers' stations. He then testified that **he had not any knowledge or experience in telephone**

construction or maintenance where these choke coils were used on a subscriber's station on a lay-out such as we have in the Naval Observatory. (R. 144)

Again, we repeat, this testimony utterly refutes the claim of plaintiff. Obviously, there is no evidence which properly could have been submitted to the jury, and on which the jury properly could have made a finding, that the defendant was guilty of negligence in failing to install in the Naval Observatory choke coils or helix to prevent injury to persons or property from lightning or foreign current.

Again, plaintiff claims that the testimony tended to show:

> "4. The defendant failed to use *loom insulation* on telephone wires where such wires were in contact or in proximity with steam pipes, water pipes and other conductors of electricity (R. 121, 150)." (Appellant's Brief, p. 11).

On cross-examination witness **Simpson** testified that he examined photographs (Pltf's Exs. Nos. 4 to 12, inclusive) and the telephone wires shown on the photographs are six inches away from the I-beams. (R. 139)

He further testified that yesterday he said he was familiar with the specifications which required insulation where the wire passes metal pieces. Those were the specifications of the American Telephone and Telegraph Company.

There was then handed to witness American Telephone and Telegraph Company Specification 3853, March 1, 1917, and after examining the specification, witness testified: That is the specification to which he had reference. That specification, or one similar to it, was in effect at the time he was engaged in the telephone work. (R. 139)

Attention of witness was then called to Section 21, page 27 of the specification which reads: "Crossing or parallelling other wires or metallic objects", and on the left side it reads: "**Gas pipes, electric light conduit, metal work, electrical bell or other signalling wires, or telephone wires not connected to same protector. Wire within one-half inch apply one layer of rubber tape and one layer of friction tape on woven conduit to inside wire, except where inside wire is in conduit, molding, or shaft,**" and witness testified: That is the specification which applies to the condition that we have here, where these twisted wires pass the I-beams; that is their specification. Their specification provides for this additional taping or insulation in case it is within one-half inch of the other metal.

He further testified that a circular loom is woven out of some fibrous material and then impregnated with asphalt or some insulating compound so that it forms a flexible tube through which a wire may be passed. Witness was then handed handbook of the American Telephone and Telegraph Company, Specification No. 3853, and was asked if he could find any place in the specifications with respect to the use of this loom, and the conditions under which the loom would be used, and after having examined the specifications he testified, they speak of it as a woven conduit which is the same thing. Witness then read from the specification as to the use of the woven conduit or loom, as follows: "Woven conduit should always be secured by tape, clamp or fastener", and witness testified, "That is all it seems to say about it". (R. 149)

Thereupon, the following occurred:

> **"Q. Do you find anything in there where it says that this woven conduit or loom should be used to cover those wires, such as the wires in this running from this terminal box down to Captain Hellweg's desk? A. No special mention.**
>
> **"Q. Is there any mention at all? A. The picture itself shows it.**
>
> **"Q. What picture? A. Coming out of the loom.**
>
> **"Q. But I mean to say, the conditions under which that is used? A. No.**
>
> **"Q. It does not show that this loom or the woven conduit should be used from these twisted wires in that branch which ran from the terminal box to Captain Hellweg's station? A. No. It does not show it there.**
>
> **"Q. It does not specify it shall be used in such conditions as that? A. No."** (R. 150)

We maintain that this evidence utterly refutes the claim of plaintiff. Manifestly, there is no evidence which properly could have been submitted to the jury, and on which the jury properly could have made a finding, that the defendant was guilty of negligence in failing to install in the Naval Observatory circular loom or woven conduit to prevent injury to persons or property from lightning or foreign current.

Lastly, plaintiff claims that the testimony tended to show:

> "5. The defendant failed to properly ground its entire telephone system at the Naval Observatory (R. 120, 124, 133, 134, 136, 137)." (Appellant's Brief, p. 11).

On cross-examination, witness **Simpson** testified he did not examine the cable from the place where it came into the Observatory to the place where it went into the junction box to see whether it was grounded to any of the water pipes in this building. He does not know whether it was grounded or not. He was not interested in that because the cable system is probably grounded anyway. (R. 130)

The cable is grounded outside when it is in the ducts, and presumably it was grounded outside at every point until it entered the building. We presume that when you put a cable in the duct in the ground it is grounded, but I do not know that it is grounded. (R. 130) He testified that running cables in the duct in the ground is the method which is in common and general use for general work. He did not examine this cable running from the place where it entered the Observatory to the junction box in the basement to see whether that cable was grounded. He did notice at a point a metal clamp. In making the ground you take a metal clamp and secure that clamp tight around the cable. That is lead-covered and then you take the other end of the wire to your clamp and clamp that around a water pipe. Such a grounding was probably there. He was not interested in the grounding of the sheath of the cable because it would be grounded anway, presumably. He did not mean to say that this cable system was not properly grounded in the building. Whatever he said about the grounding relates to the twisted wire, rather than the cable. (R. 131)

We maintain that this evidence refutes the claim of plaintiff. There is no evidence which properly could have been submitted to the jury, and on which the jury properly could have made a finding, that the defendant was guilty of negligence in failing properly to ground its telephone system at the Naval Observatory to prevent injury to persons or property from lightning or foreign current.

(A) CASES IN SUPPORT OF DEFENDANT'S POSITION.

In this case it was incumbent upon plaintiff to prove that defendant was negligent in failing to install and maintain in connection with its wires and instruments in the Naval Observatory such known and approved appliances as are reasonably necessary to safeguard against injury. The position of defendant is supported by the following authorities:

Rocap v. *Bell Telephone Co.*, 230 Pa. 597 (1911):

Trespass to recover damages for personal injuries. Verdict for plaintiff. Defendant appealed. Reversed.

Plaintiff was a newspaper reporter, and on the afternoon of June 21, 1906, went to the Philadelphia Country Club to report a polo match and remained to dinner that evening. About half past eight he left the dining room and went to the telephone booth in the building to communicate with his paper. The telephone was installed at the club house by the defendant company. **As the plaintiff took the receiver from the hook and was asked for the desired number, he received a shock and was severely injured.**

The statement alleged that it was the duty of the defendant to have the telephone properly equipped and protected so as to prevent injury to persons using it, and that "the defendant neglected to properly equip and operate its pay station".

From witnesses it appeared that the weather had been threatening all afternoon, and there was rumbling of thunder in the latter part of the afternoon, but plaintiff was inside the club house and "was not paying much attention to the surrounding elements", and did not know until next day that a thunder storm was going on at the time he went to the telephone.

Dr. Patterson, a witness, testified that about quarter after or twenty minutes after eight, while he and other guests were dining on a covered verandah, **there was a frightful blinding flash of lightning**—so much so that people sitting at dinner jumped up under the impression that the club house had been struck, and as he started to go indoors somebody came running out, and said that a man had been struck by lightning, and he went in right away and found Mr. Rocap lying on the floor, and he then examined him and found that his condition was apparently very serious.

Mr. Justice Mestrezat (p. 601):

> **"We are of opinion that the learned trial justice erred in not giving binding instructions in favor of the defendant and subsequently in not entering judgment for the defendant notwithstanding the verdict.**
>
> **"The basis of the plaintiff's action is negligence, and as disclosed by the statement, it consists in failure of the defendant company to properly equip, operate, maintain and protect its pay station at the club house, resulting in the plaintiff's injuries.** It was incumbent on the plaintiff on the trial of the cause to establish the negligence averred in the statement before he was entitled to recover. His counsel now contend in support of the judgment entered in his favor by the court below, that the maxim res ipsa loquitur applies, and that the plaintiff made out a prima facie case, and that the defendant failed to offer any evidence which shifted the burden of proof, and that the defendant company's failure to place a warning on the telephone against its use during electrical storms was evidence tending to establish the cause of negligence.
>
> **"The maxim res ipsa loquitur does not apply to the facts of the case as disclosed by the plain-**

tiff's evidence. We are not required to determine whether the maxim would have applied had the plaintiff's evidence concluded by showing simply the accident, that he had approached the telephone, took the receiver and instantly received the electric shock which caused his injuries. It might be that as the telephone line and the electric current used in operating it were in the exclusive control and management of the defendant company and the result was so unusual and out of the ordinary in operating telephones, that a fair inference might be drawn that the shock communicated to the plaintiff was caused by the defendant's negligent operation or management of its line. It possibly could have been inferred under these circumstances, though we do not decide, that the telephonic wire had come in contact with a highly charged wire by reason of the negligent construction or maintenance of the former wire, and thereby produced the electrical discharge that shocked the plaintiff. The proof of the accident and the consequent injury without more might have made out a prima facie case and sent it to the jury. The plaintiff went beyond the mere proof of the accident, and showed the cause of it. His evidence left no reasonable ground for an inference that the accident resulted from the defendant's negligence or improper operation or management of its line. It pointed conclusively to one cause, if the telephone had any connection with his injuries, and that was the act of God. The testimony of Dr. Patterson, the plaintiff's witness, leaves no rational doubt that the shock received by the plaintiff, if communicated by the telephone, was produced by atmospheric electricity, and not by an electric current within the control of man. Such being the only reasonable inference to be drawn from the evidence, and that therefore, there was another cause than the defendant's negligence, the rule res ipsa loquitur cannot be applied: East

End Oil Co. v. Pennsylvania Torpedo Co., 190 Pa. 350; Allen v. Kingston Coal Co., 212 Pa. 54.

"It appearing by the plaintiff's testimony that his injuries resulted from an act of God, the maxim has no application, and a presumption of negligence does not arise. *Actus Dei nemini facit injuriam.* The burden was therefore on the plaintiff to produce affirmative proof of negligence which concurred with the act and effectively contributed to the accident. To create a liability on the part of the defendant it must have required the combined effect of the act of God and the concurring negligence to produce the injury: Baltimore & Ohio Railroad Co. v. School District, 96 Pa. 65; and if the act was so overwhelming as of its own force to produce the injury independently of the negligence shown, the defendant cannot be held responsible. Heibling v. Allegheny Cemetery Co., 201 Pa. 171."

Judgment reversed and judgment entered for defendant non obstante veredicto.

Sinkovich v. *Bell Telephone Co. of Pa.*, 286 Pa. 427, 133 A. 629 (1926):

Appeal by defendant from judgment on verdict for plaintiff. Reversed.

Action brought by plaintiff to recover damages for death of her husband who was killed by a bolt of lightning while standing in front of a window in their home.

Defendant maintained a telephone line along a public highway near plaintiff's home. During a storm in the late afternoon of July 11, 1921, pole 105 in the line was struck by lightning. A witness for plaintiff testified he saw the pole struck and instantly thereafter saw a light on the wire running toward plaintiff's house. The wires ran north at right angles from the pole, about 270 feet to the corner of a house designated as #24. At this corner the wires divided, one set going west along the rear of #24 and also along the rear of #25, plaintiff's house. The other set went northeast from the corner of #24 to a house designated #34. Several years before the occurrence there had been a telephone in plaintiff's house, #25, but, at least five years before, it had been removed; the wires, however, had been permitted to remain suspended along the outside of the house (a frame one) and through its wall, being carried through in porcelain tubes with the ends of the wires exposed and hanging out of the tubing in the room in which decedent met his death.

Decedent, during the storm, was in the room with the wires protruding through the wall. He walked to a window near the wires and raised his hands toward the shade. In so doing he stood close to a metal sink, with a drain pipe which ran to the ground. There was a violent flash of lightning and he fell over dead with burns on his body showing that he had been electrocuted. The lightning did not enter the room from the exposed ends of the wires, but, if it came along the wires, it jumped from them several feet before reaching the place where they entered the wall, to a place above the window, in front of which decedent was standing, tearing a hole through the woodwork of the house, through the plaster and wall paper. The theory of plaintiff is that the electric current jumped from the wire where it came in contact with the wet wall, forced its way through it, jumped to decedent's body and from it to the metal sink, whence it was grounded through the pipe leading to the earth. The insulation on the wire was not burnt or bursted. The wire itself was not melted or otherwise affected. Another wire attached to pole 105 was found, after the storm to have melted through and broken.

After consideration of the evidence and the contentions of the parties, the Court said (p. 437):

> "We have discussed the case up to this point along the lines on which it was tried in the court below and presented in printed briefs and oral arguments before us. Neither in the opinion of the court below nor in the briefs of counsel here is there any reference made to the case of Rocap v. Bell Telephone Co., 230 Pa. 597, which is the only appellate court decision in this jurisdiction, so far as our own research has developed, in which lightning was alleged as the cause of damage from telephone wires. In that case Mr. Justice Mestrezat, speaking for the court, pointed out that 'The doctrine of the electric light and power cases cited by the plaintiff is not applicable to the facts of the present case' and that 'The distinction between the two classes of cases is, we think, apparent, and certainly very important'. In the pending case, it is only these cases which are cited to us. In the instant case, there is no evidence in the record to show that if an arrestor had been on the wire along house 25 it would have diverted the powerful lethal current from decedent's body and no evidence to show that there are practicable arrestors now known and in use which were not known in 1911, when that case was decided. There it was shown that the company had placed a device on the wire to prevent the discharge into the telephone of electric currents during an electrical storm. Witnesses having experience and technical knowledge testified that it was the standard protection device, the best in general use and the

most efficient known to the scientific world for protecting a telephone from lightning. The witnesses concurred in saying that there was no known device which would absolutely prevent lightning disturbances entering a telephone. In the instant case, there was no testimony produced to show that there is now a known device which will prevent the discharge of powerful electric bolts from a telephone wire. **In the Rocap Case we determined** (page 602), **'The maxim res ipsa loquitur does not apply to the facts of the case as disclosed by the plaintiff's evidence.'** It was pointed out that if the plaintiff had simply proved the accident and the consequent injury wthout more, a prima facie case might have been made out under the authorities, 'But the plaintiff went beyond the mere proof of the accident, and showed the cause of it. * * * It pointed conclusively to one cause * * * and that was the act of God. The testimony of * * * the plaintiff's witnesses leaves no rational doubt that the shock received by the plaintiff * * * was produced by atmospheric electricity and not by an electric current within the control of man. * * * **It appearing by the plaintiff's testimony that his injuries resulted from the act of God * * * the burden was therefore on the plaintiff to produce affirmative proof of negligence which concurred with the act and effectively contributed to the accident. To create a liability on the part of the defendant it must have required the combined effect of the act of God and the concurring negligence to produce the injury * * *** and if the act was so overwhelming as of its own force to produce the injury independently of the negligence shown, the defendant cannot be held responsible'. In the light of this case, we think the plaintiff's proofs, entirely aside from those of defendant, were utterly inadequate to warrant a recovery. We are, therefore, constrained to sustain appellant's assignments of error."

Judgment reversed with directions to enter judgment for defendant.

Stecher v. *Southwestern Bell Telephone Co.,* 295 Pac. 709 (Kans., 1931):

Action for damages for personal injuries alleged to have been sustained from a shock of lightning which entered the room in which plaintiff was sitting, because of defendant's negligence. The jury answered special questions and returned a general verdict for plaintiff. Defendant has appealed.

Appellant contends there is no evidence of negligence on its part, that its demurrer to plaintiff's evidence should have been sustained, and that the answers to the special questions should have been set aside for the same reason. Other errors also are assigned.

Plaintiff's testimony: He lived with his family near Wichita, the house facing west had a sitting room across the front. The dining room was just back of this; south of the dining room was a screened porch with a window and door connecting them. Back of the dining room was a kitchen and south of that, a storeroom. In 1915 there was a telephone in the dining room; the lead-in wires came into the porch and were grounded to a rod just west of the window between the porch and the dining room, which extended through the floor of the porch into the ground. About a year later the installation was changed so that the lead-in wires came to the south side of the storage room, inside of which room and on the south wall the protector was installed. The wires ran thence through the store room to the dining room and to the instrument. At the time this change was made the old rod on the porch used to ground the phone was left in place and a piece of wire was left tied to it but about the top of the window this was cut in two.

About 5:30 p. m. of June 16, 1927, plaintiff was sitting in a wooden chair in the opening between the dining room and sitting room about 7 feet from the telephone, when a severe electric storm came up. There was a real loud clap of thunder and lightning, and as the lightning hit it sent flashes of fire six or seven feet out from the telephone. Plaintiff couldn't say whether these flashes hit him but at each flash 'it felt as though someone had a dull knife just trying to cut on my insides'. Plaintiff called his mother who put him to bed, where he stayed two days and then went to the hospital for treatment.

At p. 713 the Court said:

> "Plaintiff's expert witness gave testimony on the proper method of installing a telephone and pointed out the differences between the old style protector and the newer one. No defect of installation of the telephone in question was pointed out that could have any bearing on the injury which formed the basis of this action. The differences between the two protectors were differences in their design, which did not affect their operation. Both operated on the same principle. The specific parts of the devices designed to protect against lightning were the same in the two instruments. If the new device were a better protector against lightning, the use of the old one might show a negligence of defendant. But that is not the evidence here. Defendant was not required to use the newer device simply because it was newer. If the old device furnished as good protection as the newer one, defendant had its option as to

> which it should use. The evidence in this case does not support a charge of negligence in using the older device."

Page 714:

> "The jury was forced to pure speculation and conjecture as to the negligence of the defendant. This will not support a finding of negligence.
>
> "Defendant's demurrer to plaintiff's evidence should have been sustained."

Rural Home Telephone Co. v. *Arnold*, 119 S. W. 811 (Ky., 1909):

Action for damages for personal injuries. From a judgment for plaintiffs, defendant appeals. Reversed and new trial ordered.

While using one of the telephones of appellant company, the appellee, Arnold, was struck by lightning and injured quite severely.

The only acts of negligence relied on in the lower court or this, are: (1) That the company had failed to put in a ground wire, running from the telephone box to the earth; and (2) because it had attached the wire to a tall tree within a few feet of the house and then ran it into the receiver in the building.

Carroll, J. (p. 812):

> "In our opinion the evidence we have quoted was not sufficient to establish that the telephone company was negligent either in attaching the wire to the tree or in failing to have the ground wire. The matter being investigated by the jury, was not within their knowledge or experience. They could not in the absence of expert evidence or the evidence of persons having technical information upon the subject, have reached any in-

telligent conclusion concerning the issues submitted for their investigation; and so we think that it was incumbent upon the plaintiff to introduce some evidence by experts or experienced persons showing with more definiteness and certainty than the witness who testified, that the company was guilty of negligence in respect to the matters complained of.

* * *

"Telephones have been for many years in general use all over the country and experience has pointed out the best methods and instrumentalities in their construction and equipment to prevent as nearly as practicable danger from lightning and it is the duty of the telephone companies in putting in and maintaining telephones, to exercise reasonable care to construct them in such a manner and equip them with such known and approved appliances as careful and prudent men or companies engaged in the business consider reasonably necessary to prevent injury from this source. The failure to do this is negligence. Griffith v. New England Telephone & Telegraph Co., 72 Vt. 441, 48 Atl. 643; Southern Tel. & Tel. Co. v. Evans, 116 S. W. 418."

Alling v. *Northwestern Bell Telephone Co.*, 194 N. W. 313 (Minn., 1923):

Action by Alice Alling, special administratrix of the estate of Adam E. Alling, deceased, against the Northwestern Bell Tel. Co. and another. The court directed a verdict for defendant, and from an order denying a motion for a new trial, plaintiff appeals. Affirmed.

Deceased was killed by lightning while sleeping on the floor of his dining room. The lightning struck a pine tree standing about 10 feet from the house and an automobile standing between the tree and the house, but left no marks to show the path by which it entered the house. Defendant had removed one of its telephones from the house about five years before and had left a piece of wire, some 3 feet long, which passed through the wall above a window in the dining room. One end projected into the room an inch or two at a point about 7 feet above the floor; the other hung down the outside wall. It was not connected with anything at either end. Plaintiff claims that the death of the deceased resulted from defendant's negligence in failing to remove this wire. The court directed the verdict and denied the new trial on the ground that defendant could not reasonably have anticipated that leaving this piece of disconnected wire attached to the wall of the house would result in injury to anyone, and on the further ground that whether the bolt of lightning which struck Mr. Alling passed over this wire or followed some other path can only be conjectured.

The Court said (p. 314):

> "An attentive examination of the record satisfies us that the trial court was correct in its conclusions. The rules governing such questions are well settled, although it is sometimes difficult to apply them to the facts of a particular case. If a person has no reasonable ground to anticipate that a particular act will result in injury to any one, the act is not negligent."

* * * * * * * * *

> "We also concur with the trial court in the view that the claim that there was a causal connection between this wire and the injury rests on speculation and conjecture."

* * * * * * * * *

> "The burden is on plaintiff to show that it is more probable that the harm resulted in consequence of something for which the defendant was

> responsible than in consequence of something for which he was not responsible. If the facts furnish no sufficient basis for inferring which of several possible causes produced the injury, a defendant who is responsible for only one of such possible causes cannot be held liable."

Blass v. *Virgin Pine Lumber Co.*, 50 F. (2d) 29 (C. C. A., 5th Cir., 1931):

Action by T. J. Blass, et al. against the lumber company. Judgment for defendant, and plaintiffs appeal. Affirmed.

Walker, Circuit Judge (p. 29):

> "Venable Blass, a boy about fourteen years of age, was killed by lightning while alone in the bathroom of a residence in the town or village of Piave, Miss., in which he lived with his parents. To recover damages for his death this action was brought against the appellee, which operated a plant which provided electric light for residences and places of business in that town or village. Allegations of the declaration attributed the death of the deceased to negligence of the appellee in the wiring of the residence, in that there was no ground wire attached to the wire leading into the residence either on the inside or outside thereof, and in that there were no ground transformers or lightning arresters attached to appellee's wires leading from its plant to the place where a wire led from appellee's wire conveying electric current into said residence. Those allegations were put in issue. Upon the conclusion of the evidence the court directed a verdict in favor of the defendant, the appellee."

Page 30:

> "Where an injury or death might have been due to say one of several causes for only one of

which the defendant was responsible, the jury cannot properly guess between those causes and find that the negligence or fault of the defendant was the real cause where there is no satisfactory foundation in the evidence for that conclusion. Patton v. Texas & Pacific Ry. Co., 179 U. S. 658, 45 L. Ed. 361; Illinois Power & Light Corp. v. Hurley, 30 F. (2d) 905. Instead of the evidence furnishing any substantial support for the conclusion that the entry of the electric current into the bathroom was due to the failure of the appellee to have any or sufficient ground transformers or lightning arresters on its line, rather than to a cause for which the appellee was not responsible, facts or attending circumstances shown by uncontroverted evidence were inconsistent with that conclusion, and were consistent with the theories that the electric current entered the bathroom by means of the vent pipe, and that the stroke of lightning which caused the death came from the sky near the residence or between it and the property line of the lot upon which it is located. The evidence was such that the court would have been justified in setting aside a verdict which involved a finding that the death was due to a cause for which the appellee was responsible. This being so, the above-mentioned ruling was not erroneous. Barrett v. Virginian Railway Co., 250 U. S. 473, 63 L. Ed. 1092."

Brucker v. *Gainesboro Telephone Co.*, 125 Ky. 92, 100 S. W. 240 (1907):

Judgment for defendant. Plaintiff appeals. Affirmed.

The Gainesboro Telephone Company operated a telephone system in Somerset, Ky., and maintains a pay station at the Newtonian Hotel. Frank J. Brucker, while a guest at the hotel, was using the pay station to talk to his wife in Louisville.

The phone did not seem to work well, and he took hold of the metal arm with his hand to raise the mouthpiece. When he did this, he received a severe shock of electricity which knocked him to the floor, rendering him unconscious and injuring his nerves. He suffered from the shock about a month, and brought this action to recover against the telephone company for his injury.

The Court said (p. 95):

> "Those handling electricity where the voltage is such as to endanger human life must exercise a very high degree of care for the safety of others, but where a less voltage is used which is not of itself dangerous those who use it are only liable for ordinary care. Triple State Gas Co. v. Wellman, 114 Ky. 79, 24 Ky. Law Rep. 851, 70 S. W. 49; Mangan's Administrator v. Louisville Electric Light Co., 122 Ky. 476, 91 S. W. 703. **A telephone company is a common carrier of messages, and not of persons. The duty it owes to a customer using one of its instruments is not different from that due to their customers by other persons inviting the public upon their premises for the transaction of business. In all such cases the person so inviting the public is not an insurer, but must use such care as may be reasonably expected of a person of ordinary prudence under the circumstances.**"

Paine v. *Cumberland Telephone & Telegraph Co.*, 249 Fed. 477 (C. C. A., 5th Cir., 1918):

Action by Paine against the telephone company. Judgment for defendant, and plaintiff brings error. Affirmed.

Per Curiam (p. 477):

> "This is a suit charging the Cumberland Telephone & Telegraph Company with specific acts of

negligence in connection with the burning of the property of plaintiff in error in which the wires of the Telephone Company were located. After hearing witnesses, the trial court directed a verdict in favor of the defendant.

"The case is brought to this court upon two assignments of error, to wit:

"'1. That this court committed an error in refusing to admit testimony as to previous fires in the telephone exchange of the defendant in the town of Covington, as set forth in bill of exceptions No. 1.

"'2. That the court erred in directing a verdict in this case on motion of the defendant after plaintiff had rested his case, but, on the contrary, should have ordered the trial to proceed, the whole as set forth in bill of exceptions No. 2'.

"After hearing the arguments and examining the record, we conclude that neither assignment is well taken. The evidence rejected by the court was not admissible under the pleadings, and the evidence offered wholly failed to sustain the charges of negligence set forth in the petition. The rule of res ipsa loquitur does not relieve the plaintiff in error from the burden of showing negligence. See Patten v. T. & P. R. Co., 179 U. S. 658, 45 L. Ed. 361, and Sweeney v. Erving, 228 U. S. 233, 57 L. Ed. 815.

"The judgment of the District Court is affirmed."

Wood v. Cumberland Telephone & Telegraph Co., 151 S. W. 29 (Ct. App., Ky., 1912):

Plaintiff owned a department store in Belton. Defendant installed a telephone in the store and ran the wires through the upper portion of the window in the rear. No porcelain tubes were used to insulate the wires where they entered the building and no lightning arrester was installed.

About 1 o'clock one morning plaintiff, who slept in a room over the rear of the store, awoke to find the store and merchandize on fire. He testified that earlier, about 9 p. m. he had seen sheet-lightning on the horizon, and that shortly before 1 o'clock he was awakened by a loud clap of thunder, and a vivid flash of lightning. Another witness, living one-half mile from Belton, testified that about 12:25 or 12:35 he saw a great flash of lightning and a loud clap of thunder towards Belton. At the close this testimony, the court directed a verdict for defendant and plaintiff appeals.

The Court said (p. 30):

> "It is insisted for appellant that the above evidence, together with the fact that the fire was discovered about 1 o'clock, was sufficient to make it reasonably certain that the telephone wires were struck by lightning, which imparted to them a current of electricity so powerful as to cause them in the absence of proper insulation, to pass it into the store and ignite it. We are unable to accept this conclusion. If the telephone pole from which wires run into the building, and which stood within 50 feet of it, had shown any marks of a lightning stroke, or other poles in the vicinity had shown such marks, or anything in the appearance of the wires had indicated such an electrical visitation, it would have given support to appellant's theory as to the origin of the fire; but without such support, the theory rests wholly upon conjecture.
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> * * * * * * * * *
>
> "Appellee is not required to account for the fire. On the contrary, the burden is upon the appellant to show that it is in some way chargeable to its negligence, and this he has failed to do."

Judgment affirmed.

(B) CASES CITED BY PLAINTIFF ARE READILY DISTINGUISHABLE FROM CASE HERE PRESENTED.

The cases cited by plaintiff in support of the argument that it was error for the Court below to direct a verdict for defendant are readily distinguishable from the case here presented.

As we stated at the outset of the argument, the test is whether the evidence establishes that the defendant was negligent in that it failed to install and maintain such known and approved appliances as are reasonably necessary to safeguard against injury.

Plaintiff strongly relies upon the case of *Griffith* v. *New England Telephone & Telegraph Co.*, 72 Vt. 441 (1900) (appellant's brief, pp. 9-10, 17, 19.)

In speaking of the duty imposed upon the defendant, the Court there said (p. 443):

> "* * * it was the defendant's duty to exercise due care in selecting, placing and maintaining in connection with its wires and instruments such known and approved appliances as were reasonably necessary to guard against accidents that might fairly be expected to occur from lightning when conducted to and into the house over its telephone wires."

The facts of that case are readily distinguishable from the case here presented. Moreover, in that case there was evidence that the defendant had failed to provide proper protective devices. In the instant case there is no such evidence.

The following statement of facts taken from the opinion of the Court in *Griffith* v. *New England Telephone & Telegraph Co., supra,* clearly distinguishes it from the instant case (p. 445):

> "The evidence tended to show, that at the time Dr. Sawyer was killed, one of the defendant's

> poles was struck by lightning at a point about one-quarter of a mile northeast of Dr. Sawyer's house; that the lightning seemed to spread and go in different directions, the wires being lit up and seeming to be all ablaze; that this pole was split in two, and several other poles in the immediate vicinity, and in the direction of Dr. Sawyer's house, were injured and the wire severed; that, at a point a mile and a half beyond Dr. Sawyer's house, at Putnamsville, traces of electricity were found upon an instrument; that, just before the lightning struck the defendant's telephone line, Dr. Sawyer was sitting in his house, under the telephone instrument, reading from a book; that, just after, his hair was discovered on fire and red lines were found extending down his neck, chest and side; that traces of electricity were found on the carpet, paper and floor under the chair in which he was sitting; that these were the only marks to indicate that lightning had entered the house; **that no device, as a safeguard or protection against electrical disturbances, was attached to, or connected with, the instrument, except on top, where there was a device consisting of two metal plates, which, to be complete, should be furnished with a wire attached to one of the plates and running to the ground, and between the two plates was a plug intended to 'short current the two plates without entering the bell cell', but owing to a defect in the construction of the instrument the plug did not serve the purpose for which it was intended."**

On page 11 of appellant's brief the case of *Western Telephone Corp. of Texas* v. *McCann, et al.*, 69 S. W. (2d) 465 (Texas, 1934), is cited, and a portion of the opinion of the Court is quoted.

The case cited by plaintiff was reversed in *Western Telephone Corporation of Texas* v. *McCann*, 99 S. W. (2d) 895 (Commission of Appeals of Texas, 1937). In reversing the case cited by appellant, the Commission of Appeals said (p. 900):

> "This being a case depending to a great extent upon circumstantial evidence, if we give effect to the testimony of the experts, we find that the death of Mrs. McCann may be accounted for upon a theory much more probable than the one offered by plaintiffs. This being true, under many authorities, the plaintiffs failed to make a case. If the expert testimony be disregarded, we have a situation where it was undoubtedly necessary for plaintiffs to 'piece out the facts adduced with conjectures or suggestions', and for this reason the finding of the jury to the effect that defendant's negligence was the proximate cause of Mrs. McCann's death is without legal evidence to support it."

The opinion of the Commission of Appeals was adopted by the Supreme Court, and the Court of Civil Appeals (69 S. W. (2d) 465) reversed, and cause remanded.

In *Lynch* v. *Carolina Telephone & Telegraph Co.*, 204 N. C. 252 (1933), the Court stated the facts as follows (p. 257):

> "F. B. Lynch, the father testified in part: 'The telephone was placed in my house on the customary basis of service. I had paid for the service twelve months in advance. I knew nothing about the telephone apparatus and relied upon the telephone company. I saw the bolt of lightning about 50 yards from the telephone line. I saw it on the wire that came in the house probably 50 yards from the house. It was so quick I could not tell. **I later observed the poles upon which these wires were strung and as much as a half mile up the road from my house the poles were affected by**

> **the lightning, little pieces knocked off on the ground where the lightning came on down.** At the time that Pattie was hurt, there was a tremendous explosion. It was worse than a shot gun, something like a blasting at a stone quarry. The house was full of smoke and odor. Everyone in it was scared to death, not only excited about her but scared naturally. The little piece of wire that came from the ceiling that was attached to the phone was swealed (scorched or singed) and the ceiling in the house was smoked. The house was not damaged in any other way. By swealed, I mean swealed or smoked. It was not burnt or stained. It was swealed next to the telephone.''

This case is entirely different from the case here presented.

In *Southwestern Bell Telephone Co.* v. *McAdoo,* 10 S. W. (2d) 503 (Ark., 1928), the Court stated the testimony as follows (p. 508):

> **"We have copied enough of the testimony to show that it is conflicting on the question of how the telephone was installed—whether properly done or not—and we deem it unnecessary to set out more of the testimony.**
>
> "The appellant submits four reasons why the case should be reversed. The first is that the alleged negligence on the part of the appellant in failing to install a protective device and grounded rod wire was not proved. **Both Nelson McAdoo and Florence McAdoo testified to facts showing that it was not grounded; that there was no rod there; that the man who repaired the phone after the injury brought a rod with him and drove it in the ground; that he looked around there and found none because there was none there.**
>
> **"While this testimony is contradicted by the witness for the appellant, it is sufficient evidence to submit to the jury the question of whether the**

> **instrument was or was not negligently installed.** This court has many times held that, where there is any substantial evidence to sustain the verdict of the jury, the verdict will not be disturbed, although this court might think that the weight of the testimony was the other way. This court does not pass on the credibility of the witnesses nor the weight of their testimony."

The foregoing statement of facts shows that there was contradictory testimony on the question whether the defendant had negligently failed to provide protective devices. A mere reading of this case will make it obvious that it has no application here.

In *Texas Telephone & Telegraph Co.* v. *Scott*, 127 S. W. 587 (Ct. Civ. App., Texas, 1910), the following facts appear in the opinion of the Court (p. 588):

> "Prior to the removal of plaintiff to the house in question, which was about a month before the accident, **it appears that both appellant and the Martin Telephone Company had phones in the building, both of which, however, had been removed therefrom; but while the instruments were taken out of the house the wires of both companies were allowed to remain.** There is some conflict in the evidence as to which wire conducted the lightning into the building; but we think the great preponderance thereof is in favor of the contention of appellee that it came in over the wires of appellant. **The evidence shows that appellant failed to use what is known as a 'lightning arrester', which is a device commonly used for conducting the lightning from the house**; and while the evidence shows that it grounded its wires—that it, twisted the line wire and the ground wire together, and disconnected the same from its main line—some distance away from the house, yet this is controverted by the testimony of appellee, which tended

> to show that these wires were not grounded and were not disconnected from its main line. While there is evidence tending to show that twisting the line wire and the ground wire together is one of the safeguards to prevent lightning from entering the house, **yet there is evidence to the effect that the use of a lightning arrester is a better one.** And the evidence of appellant itself is to the effect that the best and surest prevention of danger in this respect is to remove the wire entirely from the house, when the instrument is taken out which was not done by appellant in this case. **So we conclude that the evidence shows that the injury complained of was caused by the negligent failure of appellant to remove its wires from the house, or having left them there, to properly safeguard the same by approved appliances for preventing injury from lightning conducted thereover."**

This case has no application here. The facts of the case are so entirely different from the facts here presented that there can be no analogy between the two cases.

In *Southwestern Telephone & Telegraph Co.* v. *Abeles*, 94 Ark. 254 (1910), the Court stated the evidence as follows (p. 256):

> "The evidence shows that there was no ground wire in connection with the protective device or lightning arrester to the telephone in question."

Page 259:

> "Appellee when injured, was in the discharge of his duty to his employers, and was using the telephone in the ordinary way. The evidence adduced in his behalf shows that he was not attempting to use it during a severe electrical storm. His own testimony tends to show that there was no storm in progress in the vicinity of the office when

> he went to use the telephone. **The expert evidence adduced in his behalf tends to show that a protective device or lightning arrester without a ground wire attachment would be of almost no protection against lightning. His expert witness on that point went into details and gave his reasons for his opinion. His testimony is flatly contradicted by the experts on the part of appellant; but that only presents a conflict of evidence, upon which we are not called upon to pass.** Counsel for appellant urges upon us that its telephones were constructed with the kind of lightning protectors generally in use in this State, and that protectors with ground wire attachments were no where in use in the State; but this testimony only tended to show that appellant had discharged its duty by using lightning arresters of the most practical kind and in general use; and it was still a question of fact for the jury to say if this was true."

The foregoing statement of facts shows that there was a sharp contradiction between the expert called by the plaintiff and the experts called by the defendant. The Court said this presented "a conflict of evidence, upon which we are not called upon to pass." Surely, this case can have no application here.

In *Evans* v. *Eastern Kentucky Telephone & Telegraph Co.*, 99 S. W. 936, 124 Ky. 620 (Ct. App., Ky., 1907), the following facts are set forth in the opinion of the Court (p. 936):

> "Lewis Evans owns a house and lot in the town of Proctor, Lee County, Ky. In **August, 1902,** he made a contract with the Eastern Kentucky Telephone & Telegraph Co., by which it placed a telephone box in his house connected by wire to the defendant's exchange, and he agreed to pay it the sum of $1 a month for a period of 12 months for

> the use of the telephone. **At the end of the year he notified the telephone company to remove the telephone box and wires from his house. It took out the telephone box but failed to remove the wires, simply cutting them loose from the telephone box and leaving them in the house. Thus things stood until July 10, 1904,** when there was a severe thunderstorm and the lightning struck a locust tree not far from Evans' house to which the wire of the telephone company was attached. The lightning tore up the tree and passed along the wire into the house, tearing up the room in which the wires had been left and damaging the property. **The wires had remained in his house about 10 months after the telephone box was taken out before the house was struck by lightning.** During this time Evans knew that the wires were still in the house, but did not request the telephone company to take them out, not knowing that it was dangerous for the wires to remain attached to the house after the box had been taken away, this being the first experience he ever had with a telephone."

The foregoing statement of facts clearly distinguishes this case from the case here presented.

In *Wells* v. *Northeastern Telephone Co.*, 64 Atl. 648 (Maine, 1906), the following facts appeared (p. 649):

> "The defendant's line wires appear to have been suspended upon poles in the ordinary manner, one of the poles being erected within about 5 feet of the northeast corner of the plaintiff's barn. There was a curve in the road at this point and to counteract the tendency of the line wire to draw this pole from its vertical position, a guy wire, consisting of a piece of ordinary telephone wire, was stretched from the pole to the corner of the barn. **One end of this guy wire appears to have been wound around the pole at a point about two feet**

> **below the telephone wires, and the other end attached to the barn by means of a lag screw driven into the corner post a short distance below the eaves. There was no lightning arrester, or other appliance connected with this guy wire or with the telephone wires in that vicinity, to divert powerful currents to the earth at the time of thunderstorms. * * * When first seen the fire was in this corner of the barn directly beneath the point where the guy wire was connected with it, and there was no indication that the barn was struck by lightning at any other point."**

The facts of this case clearly make it inapplicable to the contention of the plaintiff here.

In *Southern Bell Telephone & Telegraph Co.* v. *McTyer*, 137 Ala. 601 (1903), the Court stated the facts as follows (p. 614):

> "The defendant had strung its wires for a mile or more to and into the storehouse of one Thomas, and had there attached them to a telephone instrument for the purpose of supplying him with its telephone service, had supplied him for a time and until **he made known to them that he did not desire the service longer and requested the company to take out its instrument. This the company at once did, but against the suggestion, not to say protest of Thomas, the defendant failed to take its wires out of the house, but cutting them loose from the instrument, twisted their ends together and left them hanging in the store.** A mercantile business was being carried on in the place, and, of course, the public were invited and were expected and had a right to be in there to make purchases of Thomas' wares. **In view of the known capacity of these wires to collect and carry dangerous currents of atmospheric electricity into the store and there discharge them to the deadly peril of persons in there at the time, and in view of the**

> **total absence of any occasion for the wires to be left there at all, there can, in our opinion, be no doubt that the company owed a plain duty not only to Thomas but also to his customers to remove the wires and thereby obviate this peril to him and to them. Nor was there any excuse or palliation for its failure to perform this duty. Its remission of it was a positive wrong committed by defendant's servant who removed the telephone and twisted up and left the wires. No man of ordinary care and prudence would have so acted.** There is not room for two reasonable conclusions as to the character of the act in respect of negligence *vel non*. It was negligence *per se* and to be so declared as matter of law."

As we have already pointed out, plaintiff strongly relies upon the case of *Griffith* v. *New England Telephone & Telegraph Co.*, 72 Vt. 441. On page 7 of appellant's brief, the rule announced in that case, which plaintiff states, has uniformly been followed by courts throughout the United States, is quoted as follows:

> "Telephone companies are required to exercise ordinary care to use those 'known and approved appliances and devices that are reasonably necessary to prevent foreign currents, including charges of atmospheric electricity, from coming over their wires and equipment so as to prevent injury to persons and property'; and failure to use those known and approved devices and appliances so designed as to prevent foreign currents and atmospheric charges of electricity from passing through their wires and equipment constitutes negligence."

We accept this as the correct principle of law applicable to the case here presented.

We maintain that there is no evidence in this record which properly could have been submitted to the jury, and on which the jury properly could have made a finding, that the defendant failed to install and maintain in the Naval Observatory **"known and approved appliances and devices that are reasonably necessary to prevent foreign currents, including charges of atmospheric electricity from coming over their wires and equipment so as to prevent injury to persons and property."**

On page 10 of appellant's brief it is argued that Colonel Simpson testified that there were known and approved appliances and devices that were designed to prevent atmospheric discharges and foreign currents of electricity from entering the lines of the defendant telephone company at the United States Naval Observatory. We have already pointed out that there is no evidence of the witness Simpson in the record to support this assertion.

On page 13 of the brief, appellant quotes from the instruction of the Court below in directing a verdict for the defendant, as follows:

> "It (defendant telephone company) was called upon to use the care that an ordinarily prudent company would have exercised under the same circumstances, and that is that they would make use of and install the well known and approved appliances *customarily used under the same circumstances by telephone people.*"

Plaintiff argues that the Court below fell into error in using the phrase "customarily used under the same circumstances by telephone people." It is argued by plaintiff that this language of the Court fails to meet the true test laid down by the authorities, that is, to use "known and approved appliances and devices which are reasonably necessary."

We submit that this argument of plaintiff is a mere quibble.

On the argument in the Court below on the motion for a directed verdict, that Court had presented to it authorities and argument in support of and in opposition to the motion for a directed verdict. (R. 182) A careful reading of the language of the Court below in directing a verdict for the defendant (R. 182-184), clearly demonstrates that in ruling on the motion the Court applied the test announced by the authorities, and on the facts in this case it was not error for the Court to direct the jury to return a verdict for the defendant.

II.

Plaintiff having failed in the attempt to prove negligence, may not invoke the doctrine of res ipsa loquitur and have the case submitted to the jury for speculation and conjecture on alleged negligence of defendant.

We submit that we have already shown that plaintiff failed to offer evidence from which it properly could be inferred that defendant was negligent in failing to install and maintain in the Naval Observatory such known and approved appliances as are reasonably necessary to safeguard against injury. Plaintiff having failed in the attempt to prove that defendant was negligent, next contends that he is entitled to invoke, and to have applied, the doctrine of *res ipsa loquitur*, and to have the jury speculate and conjecture on the question of the alleged negligence of defendant. Plaintiff takes this position notwithstanding the fact that he offered evidence showing in detail the manner of the happening of the accident, and showed as a fact that it was caused by lightning. The cause of the accident is disclosed as a definite fact, but plaintiff failed to establish that this was due to negligence of the defendant.

The reason for the application of the rule of *res ipsa loquitur* is that the facts relating to the circumstances attendant upon the happening of the accident are assumed to be peculiarly within the knowledge of the defendant.

In the case here presented, plaintiff offered evidence as to the manner of the happening of the accident. The evidence offered by plaintiff disclosed as a definite fact what caused the injury of which he complains, namely, the blue flame, static electricity, caused by lightning. This being the case, the reason for the application of the doctrine of *res ipsa loquitur* disappears.

The law is well settled in this jurisdiction: (1) In case the pleading alleges negligence specifically, plaintiff must prove the negligence alleged, and may not invoke the doctrine of *res ipsa loquitur;* (2) In case the pleading alleges negligence in general terms, yet if plaintiff offers evidence in the attempt to prove that the injury complained of was due to negligence of the defendant, he likewise may not invoke the rule of *res ipsa loquitur;* (3) In either case, the rule is the same, and the doctrine of *res ipsa loquitur* may not be invoked.

Moore v. *Clagett,* 48 App. D. C. 410 (1919):

Plaintiff sued defendant for damages for injuries received by him through the breaking of a seat in defendant's theatre. Verdict and judgment for plaintiff, and defendant appeals. Reversed and remanded.

The declaration contains no general charge of negligence, but negligence is specifically charged in that "the said defendant had theretofore prepared a large number of seats and erected the same in his theater, as aforesaid, for the accommodation of its patrons and persons attending the said theater, and in erecting and constructing said seats, defendant (his agents and servants) was guilty of gross carelessness and negligence, and negligently constructed and erected said seats, and, with like negligence, used and put into the construction of said seats, unsound and weak lumber, and which was not sufficiently strong to bear the weight of persons who might be seated thereon."

There was no evidence whatever adduced in support of the charge that defective material was used in the construction of the seat. Plaintiff was unable to state what caused the seat to give way. He proved that he purchased a ticket, entered the theater and took a seat, and through a cause unknown to him the seat broke, causing the injuries of which he complains.

The court below denied defendant's motion for a directed verdict and submitted the case to the jury.

Van Orsdel, J. (p. 414):

> "The total failure to prove the specific charge of negligence is conceded, but it is sought to sustain the judgment by invoking the rule of *res ipsa loquitur*. Undoubtedly, under a proper declaration, the rule may be invoked in a case of this sort, and the proof here adduced was sufficient to raise the necessary presumption of negligence. But the variance between the charge and the proof forbids its application here. **The rule of res ipsa loquitur arises in a case where the accident is such that, in the ordinary course of events, it would not have happened except through the negligence of the defendant, and where the facts relating to**

> **the accident are peculiarly within his knowledge.** In such a case, from the mere happening of the accident, a presumption of negligence arises, which, if not satisfactorily explained by the defendant, authorizes a recovery. Sweeney v. Erving, 228 U. S. 233, 240, 57 L. ed. 815, 818. It is within the election of the plaintiff to avail himself of the rule by merely alleging and proving the circumstances of his presence, the accident, and the injuries sustained. He may elect, however, to specifically allege in detail the circumstances which led to the accident and upon which the charge of negligence is based. But, by electing to take this course, he assumes the burden of establishing the negligence in the manner charged, and the rule of *res ipsa loquitur* is thereby banished from the case."

Pistorio v. *Washington Railway & Electric Co.*, 46 App. D. C. 479 (1917):

Suit to recover damages for personal injuries received by appellant while riding in defendant's street car. The accident was the result of a collision between the street car and an automobile owned by defendant George Walker. Verdict and judgment for defendants and plaintiff appeals. Affirmed.

Van Orsdel, J. (p. 484):

> "Exception is taken to the refusal of the court to grant a prayer imposing upon both defendants the burden of proving by a preponderance of the evidence that they were free from negligence, on the theory that the law raises a presumption of negligence in this case from the mere happening of the accident. The court, over objection, granted prayers offered by counsel for defendant railway company to the effect that in this case no

presumption of negligence arose from the mere happening of the accident, and that the burden of proof was upon plaintiff to establish not only that the railway company was negligent, but that its negligence contributed to the injury of plaintiff.''

Page 485:

"It is alleged in the declaration how and where the collision occurred, and the negligence of defendants is generally charged. **All the circumstances tending to establish negligence on the part of defendants were adduced by the testimony of plaintiff and her witnesses in her case in chief. Nothing was left for defendants but rebuttal. To such a case the rule of res ipsa loquitur has no application.** Where the plaintiff assumes to allege the facts constituting negligence, he is bound to prove them, and no inference of negligence arises from the happening of the accident. 'It is sufficient for him to charge in general terms that he was injured while being carried as a passenger, as the result of the negligence of the carrier. But when the plaintiff chooses to allege in his petition the specific acts of negligence of which he complains, he assumes the burden of proving them, and as in other cases must recover, if at all, upon the negligence pleaded'. Hamilton v. Metropolitan Street R. Co., 114 Mo. App. 504, 89 S. W. 893, quoted with approval in Jacquette v. Capital Traction Co., 34 App. D. C. 41, 44. **The same rule applies where negligence is alleged in general terms, but the plaintiff voluntarily assumes the burden of proving it.** 'This presumption only arises in the absence of evidence of the circumstances out of which the negligence of defendant may be ascertained.' Sullivan v. Capital Traction Co., 34 App. D. C. 358, 374."

It is established as a settled principle of law that where the cause of the injury is shown as a definite fact, the rule of *res ipsa loquitur* may not be invoked, and the plaintiff must prove that it was due to negligence of the defendant.

Stangy v. *Boston Elevated Railway Co.*, 220 Mass. 414, 107 N. E. 933 (1915):

Tort for personal injuries sustained by the plaintiff on February 13, 1911, when he was a passenger in a street railway car operated by defendant on Boylston Street in Boston. At the close of plaintiff's evidence in the Superior Court the judge ruled that plaintiff was not entitled to recover and ordered verdict for defendant. Plaintiff alleged exceptions. Exceptions overruled.

Plaintiff was cut by glass from the car windows broken by a "crash". The crash was caused by a collision between the car in which plaintiff was a passenger and a coal wagon, but there is nothing to indicate by whose fault this was caused.

The Court said (p. 416):

> "The case at bar is not within the doctrine of *res ipsa loquitur*, which oftentimes is enough to support a finding of negligence on the part of a common carrier. (Citing cases.) That doctrine does not establish liability where a definite cause is clear on the evidence. It applies only when the cause, although unexplained, does not happen according to common experience without fault on the part of the defendant.
>
> **"The case at bar is not an instance of an unsuccessful attempt to prove the precise cause, which would not bar the plaintiff from relying upon appropriate presumptions, but it is a case where inferences are excluded because the cause is dis-**

closed to be a definite fact. (Citing cases.) **In cases of this sort such fact must be shown to be the result of the defendant's negligence before there can be recovery."**

Anderson v. *Northern Pacific Railway Co.*, 88 Wash. 139, 152 Pac. 1001, L. R. A. 1917F, 1920 (1915):

Appeal by plaintiff from judgment dismissing an action for damages for the death of plaintiff's husband alleged to have been caused by defendant's negligence. Affirmed.

The railroad ran an excursion train from Aberdeen to Moclips for the butchers' and grocers' picnic. As first made up it contained 15 cars, but the crowd necessitated adding a car. The car so added had a broken gate on the rear of the rear platform so that conductor locked the door leading to this platform. During the trip three boys opened the door by means of a key they had and went on the rear platform. Seeing the jet there for the air-brake they opened it wide, jerking the train to a stop and causing the drawbar coupling between the second and third cars to break, and the cars to part just as plaintiff was passing between these cars. He fell between the cars and was killed. Plaintiff sought to show that the steel in the drawbar was crystallized, but the court held that this was a latent defect, if any, and could not have been determined by defendant on examination. Plaintiff sought to show negligence in defendant's failure to connect the cars with coupling chains with which they were provided, but the evidence showed that a jerk violent enough to break the drawbar would have broken these chains also.

The court having granted defendant a nonsuit on plaintiff's evidence, plaintiff appeals.

At p. 144 the Court said:

> **"Finally, reliance is placed upon the doctrine of res ipsa loquitur.** It is a well known rule that, where a passenger is injured and it is shown that the injury was caused by some person or thing connected with the carrier's railroad or business of transportation, a presumption of negligence will arise. **In this case, however, the appellant did not rely upon the presumption, but introduced evidence showing the cause which produced the accident. But this was a definite fact. In such a case the doctrine of res ipsa loquitur does not apply."**

The court then quotes at length from *Stangy* v. *Boston Elevated Railway Co.*, 220 Mass. 414, 107 N. E. 933, to the same effect.

Conduitt v. *Trenton Gas & Electric Co.*, 326 Mo. 133, 31 S. W. (2d) 21 (1930):

Appellant operated an electric light system in Trenton where respondent lived. Appellant's service wires carried the current to the outside of respondent's house where they connected with the interior wiring of the house. Appellant's system of wires consisted, first, of a primary line carrying 2300 volts running from the plant to a transformer located two blocks away. The transformer reduced the voltage to 110 for use in the residence, and the current was carried thence on service wires. These service wires were on cross-arms near the top of poles and the cross-arms carried another wire which furnished current for the street lighting system— about 1600 to 1800 volts. The secondary wires were not grounded at the transformer.

Plaintiff was seriously shocked while pulling the electric light cord in her home. Other persons on the circuit experienced shocks on the same evening. One of them called defendant's lineman, who, with defendant's superintendent, cut off the current and traced the circuit. They found a limb had fallen across the street lighting wire and the service wires at a point two blocks from plaintiff's residence. This tree was on private property eight feet from the wires. It had pushed the wires together and was holding them there. At this point there was a substance on the wires, referred to by some witnesses as "insulation" and by others as "water proof covering". It was water-soaked and not burned.

The only means appellant had of discovering an excess charge on the service wires was to have one of its patrons report it, unless one of its employees should happen to see the limb over the wires. Ground of the service wires at the transformer would not necessarily take care of an excessive current on such wires according to the testimony of one of plaintiff's electrical experts.

The case was submitted to the jury under instructions governing the doctrine of *res ipsa loquitur.* Verdict and judgment for plaintiff, and defendant appeals. Reversed.

The Court said (p. 142):

> **"The second point, however, we think is well taken. At the trial the respondent proved the specific cause of the accident with its contributing factors,** viz: the good condition of the house wiring and lighting fixtures; the close proximity of the tree and its partly decayed limb to appellant's wires; the breaking of the limb and its presence on the wires, holding them in contact some three and a half hours after the storm had ceased; the want of insulation effective to prevent the charging of the house wires with an unusual and dangerous

current; the absence of a ground wire at the transformer to carry off the excessive current; and the appellant's failure to have or to employ means for a prompt discovery of the dangerous diversion of its current into the house wires.

"On the issue of negligence the appellant relies for its exculpation on these same facts and circumstances developed by respondent. There was no substantial dispute about how the accident occurred. Furthermore, the respondent's brief contains the unequivocal statement: 'Instead of relying upon any presumption, the plaintiff has proved her case by direct evidence'. In these circumstances there is no room for presumption and the respondent must be said to have abandoned that theory of submission. (Citing authorities).

"The doctrine of these authorities is that even though the plaintiff introduce evidence tending to show specifically the cause of the accident the benefit of the rule *res ipsa loquitur* will not be waived or lost if by this evidence the cause is still left in doubt or is not clearly shown; **but where the precise cause is shown there is no occasion or room for the application of a presumption. The plaintiff is bound by his evidence in a res ipsa case just as he would be in any ordinary negligence action and cannot in effect say to the jury, 'I have shown you exactly how the accident occurred but you are, nevertheless, still at liberty to speculate and presume it may have happened some other way.'**

"We have in mind the further rule that the presumption of negligence under the doctrine *res ipsa loquitur* is a substantial presumption or inference of fact which does not disappear upon the adduction of evidence by the adversary party tending to disprove negligence. (Citation.) **But that does not mean the plaintiff can fill in all the gaps in his own case and leave nothing to inference, and then recover on some other theory."**

Galligan v. *Old Colony Street Railway Co.*, 182 Mass. 211 (1902):

Two actions of tort by a husband and wife for injuries suffered by both through the negligence of defendant. Verdict for defendant in each case, and plaintiffs allege exceptions. Exceptions overruled.

On December 23, 1900, in the evening after dark, defendant's car, properly equipped and manned was running from Providence to Taunton, and it was conceded that the accident was not due to negligence in the operation of the car. The tracks ran through a cut excavated through a ledge. The side of the cut was 8 or 10 feet high, and 4 to 6 feet from the nearest rail. The side was vertical for 5 or 6 feet, and then sloped back at a slight angle. In it was a cleft beginning about 2 feet above the rail and running in a V-shape to the top of the ledge at a point about 8 feet above the rail and about 10 feet back. In the cleft was earth or soil. This caved in and a stone rolled down out of the cleft and stopped between the rails. This stone derailed the car on which plaintiffs were passengers, causing their injuries. The trial court instructed that plaintiffs could not rely solely upon the accident to show negligence, but the burden was upon them to prove it. Plaintiffs excepted to this instruction.

At p. 214 the Court said:

> "We are of opinion that the plaintiffs cannot complain of the instruction that the mere happening of the derailment, or the mere happening of the accident, was not in and of itself evidence of negligence on the part of the defendant. **The plaintiffs had alleged and shown not only a derailment, but also that it was caused by the presence between the rails of a large stone which had rolled upon the track from the adjoining bank, and the**

> **issue which was treated at the trial as the decisive one to be settled by the jury was whether the stone was upon the track by the fault of the defendant. The plaintiffs by going as far as they did had made it impossible for themselves to rely upon the mere derailment as evidence of negligence."**

Buckland v. *New York, New Haven & Hartford R. R. Co.*, 181 Mass. 3 (1902):

Tort by a railway mail clerk in the employ of the United States travelling on a pass, against a railroad company for injuries caused by the derailment and overturning of a car of the defendant in which plaintiff was lying asleep on a table. On the trial defendant asked instructions leading to a directed verdict on the ground that there was no evidence of the negligence of defendant in several particulars. These were refused and the jury found a verdict for plaintiff. Defendant alleged exceptions. Exceptions sustained.

Lathrop, J. (p. 4):

> **"If we assume that the plaintiff was a passenger, and might have rested his case by showing that the car in which he was riding was derailed, thus making out a prima facie case, he did not choose to do so, but went on and showed by his own witnesses just how the accident happened. Unless, therefore, the evidence put in by him tended to show negligence on the part of the defendant, he was not entitled to go to the jury.** Winship v. N. Y., N. H. & Hartford R. R., 170 Mass. 464. * * *." Exceptions sustained.

Winship v. *New York, New Haven & Hartford R. R. Co.*, 170 Mass. 464 (1898):

Holmes, J. (p. 464):

> "This is an action for personal injuries received by the plaintiff while a passenger on the

defendant's train. She had been directed by the conductor to take the rear car in order to be carried to Randolph, her destination. When the train stopped at Quincy she had got out and was going toward the rear of the train when she was struck by a bundle which was thrown from one of the cars.

"The judge ruled that the defendant was not liable, undoubtedly on the assumption that it was not controverted that the bundle was thrown from an express and baggage car which was on the train. On that assumption the ruling was correct. **If the plaintiff's case had stopped with the fact that the bundle which struck her came from the defendant's train, she would have been entitled to go to the jury,** because the jury would have been warranted in saying from their general experience that parcels commonly are not thrown from trains by passengers, and when thrown are thrown most commonly by railroad hands. If this had been the opinion of the jury, they would have been warranted in presuming that what they thought usual had happened in this case. The plaintiff had a right, of course, to stop with the case supposed, and to controvert any additional evidence that might be offered to qualify or control it. **But if the plaintiff did not choose to stop with the fact that the bundle was thrown from the train, but saw fit to go further and show it to have been thrown from an express car, by her own act she destroyed her right to go to the jury,** because a jury certainly could not say that bundles thrown from an express car or from an express and baggage car generally are thrown by train hands rather than by expressmen, and therefore could not make the necessary presumption of fact against the defendant and in favor of the plaintiff. If the bundle was thrown by an expressman not a servant or agent of the company, the defendant was not liable." Judgment on the verdict.

Heidt v. *People's Motorbus Co.,* 219 Mo. App. 683, 284 S. W. 840 (1926):

Action for damages for injuries sustained by plaintiff while a passenger on a motorbus operated by defendant. The petition alleged general negligence and sought to invoke the rule of *res ipsa loquitur.*

On the trial plaintiff testified she was riding on defendant's bus in St. Louis on a rainy day. The bus was going about eight or ten miles per hour when the rear wheels skidded around and struck the curb and bounced back with an unusually severe jolt and threw her from her seat injuring her. The motorman corroborated this and testified that he had not applied the brakes or been negligent in any way so as to cause the bus to skid. A demurrer to the evidence made by defendant at the close of plaintiff's case and again at the close of the entire case was refused. Verdict and judgment for plaintiff. The court then granted defendant a new trial on the ground that it had erred in denying defendant's demurrers. Plaintiff appealed. Judgment affirmed and case remanded.

At p. 688 the Court said:

> "There is no question but what the petition in this case charges general negligence. Plaintiff was a passenger; defendant was a common carrier for hire; and plaintiff, by showing the unusual happening of an extraordinary and unusual jerk or jolt of the car, made a prima facie case entitling her to invoke the rule of *res ipsa loquitur.* **But plaintiff did not stop at making a prima facie case.** She went further, and showed that the automobile skidded and hit the curb, and swerved back, and that the skidding of the automobile was the cause of its hitting the curb. **It is true that plaintiff may not be denied the right to invoke the rule of**

res ipsa loquitur by showing some specific acts of negligence. (Price v. Railway, 220 Mo. 435, 119 S. W. 932.) **But in this case she showed specifically and exactly what caused the accident.** Now the mere skidding of an automobile is not necessarily negligent, nor will negligence be presumed from the mere skidding without some fact or circumstance connected therewith from which negligence may be inferred. The skidding of an automobile or a motorbus, while being driven along a wet street at the rate of eight or ten miles an hour, may happen with the most careful driver, and therefore cannot be presumed to be negligent. (Citing cases.)

"**Plaintiff not only made a prima facie case, but destroyed it in the making by showing what specific act caused the accident**, and there is nothing in the evidence offered on the part of defendant that would aid her in reviving the prima facie case which she had destroyed. If there had been any evidence offered on the part of plaintiff or defendant tending to show that the driver of the motorbus had improperly applied his brakes, or if he had attempted to avoid striking another car, or some act of commission or omission on his part which may have tended to cause the car to skid, it would then be a question for the jury."

McAnany v. *Shipley*, 189 Mo. App. 396, 176 S. W. 1079 (1915):

Action for damages for personal injuries suffered when a board was blown off of defendant's building and struck plaintiff on the sidewalk. **The petition charges general negligence only. Plaintiff introduced testimony that the board was rotted and loose and had, for some time prior to the accident, been dangling from the building.** He produced the board in court and showed the nails rusted away and the rotted wood. **He asked and the court gave an instruction that plaintiff was entitled to the presumption of negligence merely by showing the occurrence of the accident.** Verdict and judgment for plaintiff, and defendant appeals. Reversed and remanded.

At p. 399 the Court said:

> "We therefore have this condition of case: **Plaintiff, by his petition, founded his action on general negligence in reliance upon the doctrine of res ipsa loquitur,** whereby a presumption of law would take the place of proof, and **by his evidence abandoned that theory and, as we have said, showed particularly how the matter transpired.** The rule, *res ipsa loquitur*, aids the injured person who does not know why a certain catastrophe happened, or does not fully know and needs the aid of a presumption to complete his case. **But if he knows, just how it came to happen and just what caused it, and proves it, there is neither room nor necessity for a presumption."**

In support of the argument that although plaintiff failed in the attempt to prove negligence, nevertheless, he may invoke the doctrine of *res ipsa loquitur*, plaintiff cites several cases (Brief, pp. 35-38). An examination of these cases will reveal, we believe, that the facts in each of the cases cited are distinguishable from the facts here presented. One of the distinguishing characteristics is that in the case here presented plaintiff showed as a definite fact the cause of the injury complained of, while in the cases cited, the cause of the injury was not shown by the plaintiff as a definite fact. Plaintiff appears strongly to rely upon the case of *Cassady* v. *Old Colony Street Railway Co.*, 184 Mass.

156, 68 N. E. 10 (1903). In that case the Court said (p. 163):

> "* * * **It is true that where the evidence shows the precise cause of the accident,** as in Winship v. N. Y., N. H. & Hartford R. R., 170 Mass. 464, and Buckland v. N. Y., N. H. & Hartford R. R., 181 Mass. 3, and similar cases, **there is of course no room for the application of the doctrine of presumption. The real cause being shown, there is no occasion to inquire as to what the presumption would have been if the cause had not been shown."**

This portion of the opinion of the Court immediately precedes the portion of the opinion, quoted on plaintiff's brief (pp. 35-36). This case very clearly illustrates the difference between the case here presented, and the cases relied upon by the plaintiff.

Again, plaintiff cites the case of *Pennsylvania Co.* v. *Clark,* 266 Fed. 182, and quotes a portion of the opinion, but omits a portion thereof. Supplying the portion omitted by plaintiff, the quotation reads as follows (p. 187):

> "We have no occasion to determine whether or not the rule that in passenger cases negligence is presumed from the mere fact of accident applies, where specific negligence alone is pleaded; for we think the better rule, sustained by the greater weight of authority, supports the application of the rule of presumption under the pleadings here. That even an unsuccessful attempt by a plaintiff to prove by direct evidence the precise cause of the accident (*plaintiffs here made no such attempt*) does not estop him from relying upon the inference of negligence from the accident itself, * * *." (Cases cited) (Italics ours.)

We submit that this case is not an authority for the contention of plaintiff.

In view of the fact that our brief has already reached proportions greater than we had expected, and inasmuch as we have pointed out generally the distinction between the cases cited by plaintiff and the instant case, in order to avoid unduly lengthening this brief, we refrain from any extended analysis of the other cases cited by plaintiff on this point. It suffices to say that there is a clear distinction.

Plaintiff (Brief, pp. 39-40) cites and quotes from the case of *Lyman* v. *Knickerbocker Theatre Corporation*, 55 App. D. C. 323, and argues in effect that because plaintiff allegedly complied with the doctrine of that case he was penalized by the Court below by reason of the refusal of the Court below to submit the case to the jury for speculation and conjecture under the doctrine of *res ipsa loquitur*, after the plaintiff had failed in the attempt to prove negligence of defendant.

The principles announced in the case of *Lyman* v. *Knickerbocker Theatre Corporation*, *supra*, are not at all at variance with the principles announced in *Moore* v. *Clagett*, *supra*, and *Pistorio* v. *Washington Railway & Electric Co.*, *supra*. The holding in the *Lyman Case*, *supra*, is merely that plaintiff, having elected in the first instance to invoke the doctrine, he was precluded from introducing evidence anew, after the close of defendant's evidence, to prove specific acts of negligence.

In conclusion on this point, we maintain that plaintiff showed as a definite fact the cause of the injury complained of, but failed in the attempt to prove that this was due to negligence of defendant. Inasmuch as there was no evidence which properly could have been submitted to the jury and, upon which the jury could properly have made a finding that the defendant was negligent, plaintiff was not entitled to have the case submitted to the jury on mere speculation and conjecture, and the Court below did not err in directing a verdict for defendant.

III.

The rule in this jurisdiction is that it is the duty of the trial judge to direct a verdict for the defendant where there is no evidence upon which a jury properly may find a verdict for plaintiff.

On the evidence in this case, the rule is peculiarly applicable, and the Court below did not err in directing a verdict for defendant.

Ferreyros v. *Fox Theatres Corp.*, 68 F. (2d) 575 (App. D. C. 1933):

Action for damages for negligence, by reason of a dancer on the stage of the theatre being injured by an elevator or lift, which forms a part of the stage proper.

The court instructed a verdict for defendant. From the judgment, plaintiff appeals. Affirmed.

Groner, Associate Justice (p. 576):

> "The rule in the federal courts in relation to the right of a court to withdraw a case from the jury is that whenever the evidence is clearly such that if a verdict were rendered for one of the parties the other would be entitled to a new trial, it is the duty of the judge to direct the jury to find according to the views of the court. Penna. R. Co. v. Chamberlain, 288 U. S. 333, 343, 77 L. ed. 819."

Wilson v. *Bordon*, 62 F. (2d) 866 (App. D. C., 1932):

Action for damages against a physician for malpractice. Upon a directed verdict for the defendant at the close of all the evidence, plaintiff appeals. Affirmed.

Robb, Associate Justice (p. 868):

> " 'Where the evidence upon any issue is all on one side or so overwhelmingly on one side as to leave no room to doubt what the fact is, the court should give a peremptory instruction to the jury. People's Savings Bank v. Bates, 120 U. S. 556, 562, 30 L. ed. 754; Southern Pacific Company v. Pool, 160 U. S. 438, 440, 40 L. ed. 485. * * *' "

Pennsylvania Railroad Company v. *Chamberlain*, 288 U. S. 333 (1933):

Mr. Justice Sutherland (p. 343):

> "It repeatedly has been held by this court that before evidence may be left to the jury, 'there is a preliminary question for the judge, not whether there is literally no evidence, but whether there is any upon which a jury can properly proceed to find a verdict for the party producing it, upon whom the onus of proof is imposed'. Pleasants v. Fant, 22 Wall. 116, 120, 121, 22 L. ed. 780, 782. And where the evidence is 'so overwhelmingly on one side as to leave no room to doubt what the fact is, the court should give a peremptory instruction to the jury.' Gunning v. Cooley, 281 U. S. 90, 94, 74 L. ed. 720, 724, 50 S. Ct. 231; Patton v. Texas & P. R. Co., 179 U. S. 658, 660, 45 L. ed. 361, 363, 21 S. Ct. 275. The rule is settled for the federal courts, and for many of the state courts, that whenever in the trial of a civil case the evidence is clearly such that if a verdict were rendered for one of the parties the other would be entitled to a new trial, it is the duty of the judge to direct the jury to find according to the views of the court. Such a practice, this court has said, not only saves time and expense, but 'gives scientific certainty to the law in its application to the facts

> and promotes the ends of justice.' (Citing cases.) The scintilla rule has been definitely and repeatedly rejected so far as the federal courts are concerned."

Pleasants v. *Fant*, 22 Wall. 116, 22 L. ed. 780 (1875):

In affirming a judgment on a directed verdict the court, by Mr. Justice Miller, said (p. 783):

> "Must the court go through the idle ceremony in such a case of submitting to the jury the testimony on which plaintiff relies, when it is clear to the judicial mind that if the jury should find a verdict in favor of plaintiff that verdict would be set aside and a new trial had? Such a proposition is absurd, and accordingly we hold the true principle to be, that if the court is satisfied that, conceding all the inferences which the jury could justifiably draw from the testimony, the evidence is insufficient to warrant a verdict for the plaintiff, the court should say so to the jury."

See also:

Jackson, Administratrix v. *Capital Transit Company*, 66 W. L. R. 902 (App. D. C., 1938.)

CONCLUSION.

In conclusion it is respectfully submitted that the Court below did not err in granting the motion of defendant, and in directing a verdict for defendant, and the judgment appealed should be affirmed.

Respectfully submitted,

Geo. P. Hoover,
R. A. Van Orsdel,
Attorneys for Appellee.

May 1, 1939.